SIEMENS

DESIGO™
REX (Report Engine for Excel)
User's guide

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For internal use only

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1 Scope

The first part of this guide takes the form of a tutorial covering the overall procedure for creating and displaying a report, with some of the possible options. The second part consists of a detailed description of all the functions (not in tutorial form).

2 Limitations

The procedures described result in changes to the installed templates. REX must therefore always be re-installed before starting this tutorial.

2.1 English terms

REX uses certain English terms which, for technical reasons, cannot be translated, into other languages. These are:

English	Description
Definition	Folder name
Template	Folder name
Picture	Sheet name, e.g. Picture11
Diagram	Sheet name, e.g. Diagram11 (chart)
Translation	Sheet name
RawData	Sheet name
REXPrivate	Sheet name, normally an internal, hidden sheet
AdpEngineeringReport.txt	File name; list of pictures and diagrams
Report	Sheet name; this name can be modified
Calculation1	Sheet name; this name can be modified

Irrespective of the language with which you are working, you will inevitably need to commit these words to memory for use with REX.

3 Example (Tutorial)

In this example we shall create a report for a hotel with a template and two common templates.

3.1 Installation

There is a special setup program for the installation of REX. On completion of the installation, the REX add-in is integrated into Excel. In addition, a directory structure is created under C:\PDM-ADP\CC_Layout (directory: Excel). This also contains all the files needed for this example.

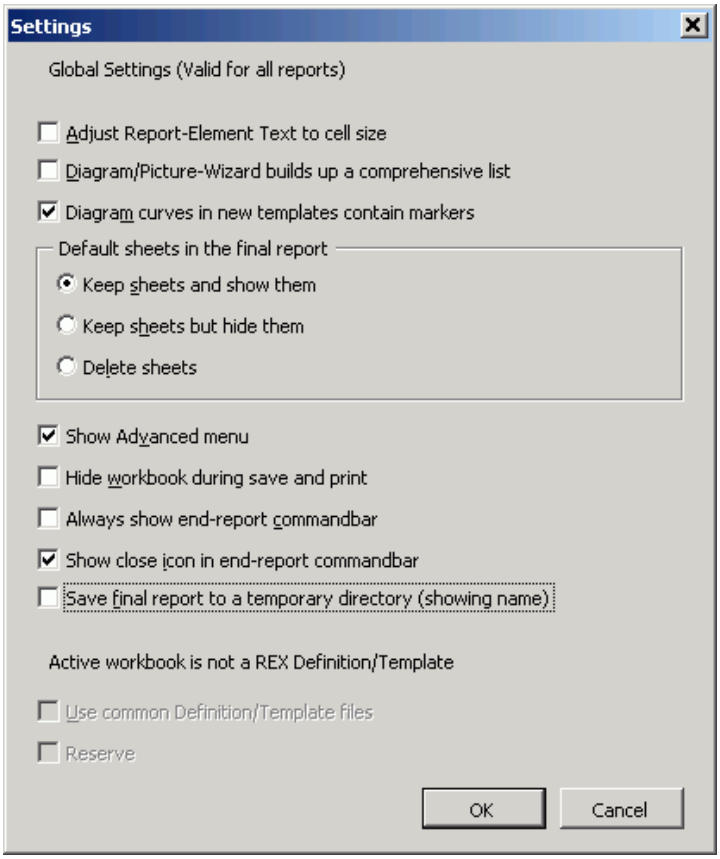
3.2 Starting the REX engineering environment

Logon

Click the **Logon** button. This opens the various REX toolbars.

Settings

Carry out the following settings:


Settings
Global Settings (Valid for all reports)
Adjust Report-Element Text to cell size
Diagram/Picture-Wizard builds up a comprehensive list
Diagram curves in new templates contain markers
Default sheets in the final report
Keep sheets and show them
Keep sheets but hide them
Delete sheets
Show Advanced menu
Hide workbook during save and print
Always show end-report commandbar
Show close icon in end-report commandbar
Save final report to a temporary directory (showing name)
Active workbook is not a REX Definition/Template
Use common Definition/Template files
Reserve
OK
Cancel

Wrong language

Tip

If the wrong language is selected, this can be changed under **Advanced**.
This only works if you first execute the command **Logon incl. Icon Redraw** under **Advanced**.

This only applies to the test version. The release version uses the language installed by PDM-ADP-CC32.

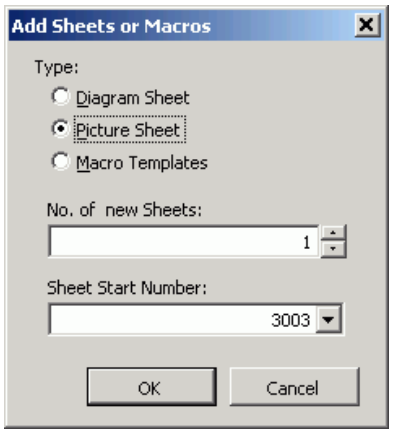
3.3 Completing the Common template

We shall start by completing the Common template (the template supplied by Siemens).

Procedure

1. Select **Miscellaneous | Open Definition/Template**, and from the **Template** folder select the file **ImaCommonTemplate.xls**.
   This folder already contains two pictures (Siemens and Hitachi).

   Add another picture: Select **Miscellaneous | Add Sheets/Macros…** and set the following options:



2. Click **OK** to close the dialog box.
   We now have a new sheet.

3. Delete the Siemens logo.

4. Insert the file SiemensBau.gif: Select **Insert | Picture | From File…**
   (Path: C:\PDM-ADP\CC_Layout\Excel\Utilities\SiemensBau.gif)

5. Center the picture and change the descriptive text to *Siemens BAU logo.*

6. Select **View | Toolbars** to display the **Picture** toolbar.

7. Click the **Set Transparent Color** icon and click in the white area of the picture (this removes the white).

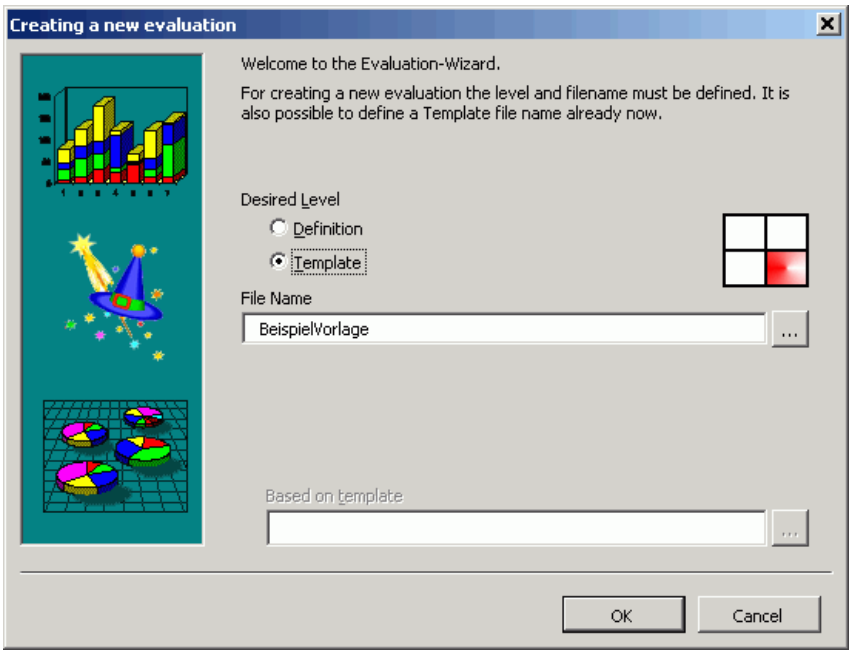
8. The logo is now complete and can be saved with **OK**.

3.4 Creating a template

Creating a template

We shall now create a new template (these templates are normally supplied by Siemens).

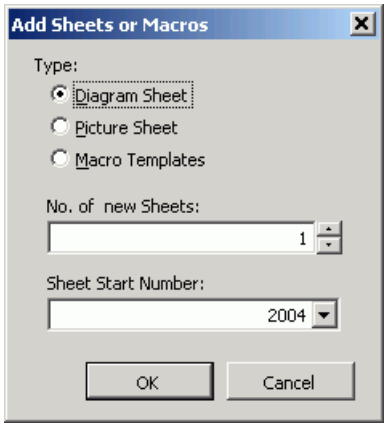
1. Click the menu option **New Definition/Template** and complete the dialog box as shown below:


Creating a new evaluation
Welcome to the Evaluation-Wizard.
For creating a new evaluation the level and filename must be defined. It is also possible to define a Template file name already now.
Desired Level
Definition
Template
File Name
BeispielVorlage
Based on template
OK
Cancel

We now have a brand-new blank template.

The template contains three types of chart (line, column and pie) However, we want a 3D Area chart. We therefore need to add another chart (or modify an existing one).

2. Select the menu **Advanced | Add Sheets/Macros…** and set the following options:



3. Right-click on the chart and select **Chart type**.
4. Select **Area** as the chart type, and **3D Area** as the sub-type.
5. Modify the text in **Cell A3** to "Area Diagram". We shall be using this diagram later.

What do we want to display in the chart?

We want to display the total energy consumed in kWh for our restaurant. The data supplied is: electricity consumption in kWh, oil consumption in liters and outdoor temperature in degrees Centigrade.

We start by inserting the four data series (DS). These are: 1. Date/Time, 2. Electricity, 3. Oil and 4. Temperature.

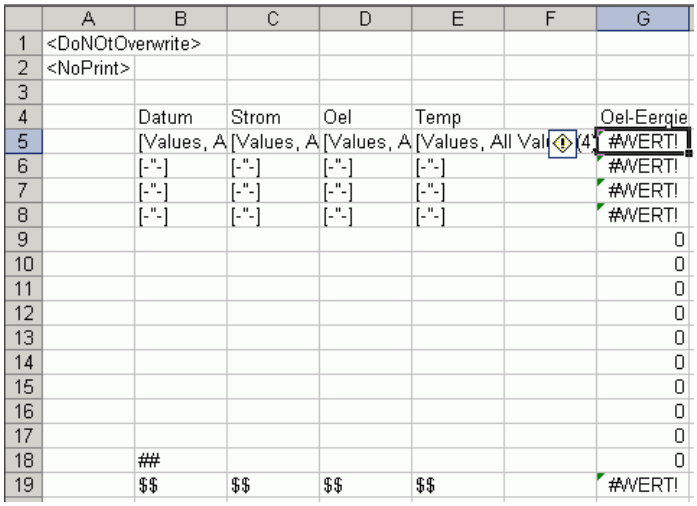
1. Change to the sheet **Calculation1**. Set a "1" in the dropdown list
   (For our first column, we shall use the first series in the RawData sheet).
2. Now click **All Values** in the menu **Entry | Values**, and
3. Click with the cursor in **Cell B5**. The series is now inserted. When the report is generated, data will be inserted from the RawData sheet.
4. Now set **Entry** to 2 and place the second series in **Cell C5**. Place the third series in **Cell D5** and the fourth series in **Cell E5**.

Conversion factor

In the case of the oil, we need to convert value from liters to kWh. We can use the sheet **Calculation1** for this too. One liter of oil has an energy content of 10.03 kWh.

5. We need to write the following formula in **Cell G5**: =D5*10.03
   We then copy the formula vertically to the next 13 cells in this column (we will be creating a 14-day chart later).

The sheet now looks like this:



	A	B	C	D	E	F	G
1	<DoNOtOverwrite>						
2	<NoPrint>						
3							
4		Datum	Strom	Oel	Temp		Oel-Eergie
5		[Values, A	[Values, A	[Values, A	[Values, All Val	(4)	#WERT!
6		[-"-]	[-"-]	[-"-]	[-"-]		#WERT!
7		[-"-]	[-"-]	[-"-]	[-"-]		#WERT!
8		[-"-]	[-"-]	[-"-]	[-"-]		#WERT!
9							0
10							0
11							0
12							0
13							0
14							0
15							0
16							0
17							0
18		##					0
19		$$	$$	$$	$$		#WERT!

We now want to ensure that no more than 14 values are entered during the test run with random numbers. (Default = 30 days)

6. Set flags ($$) in the final cells.
   The flag ## defines a column as a date column for the random numbers in the test run. The following ## flags are possible:
   - ## = Start 1.1.2000, resolution of 1 day
   - ##36922 = Start: 15.1.2001, date resolution (To create this number: Enter the date in Excel and set the cell format to Number.)
   - ##36922s = Start: 15.1.2001, resolution of 1 second
   - ##36922s10 = Start: 15.1.2001, resolution of 10 seconds
   - ##m = Start: 1.1.2000, resolution of 1 minute

   Other options:
   h = resolution of 1 hour, t = resolution of 1 day, w = resolution of one week,
   M = resolution of 1 month, q = resolution of 1 quarter, y = resolution of 1 year.

   The ## flags can be placed anywhere in the relevant column.

7. **Save File** *or* **Save File As…**

Test run

Now we are ready to run the first test.

1. Click the **Start Test Run** icon.

   If we switch to the Calculation1 sheet, we will see the following (after widening the first column):

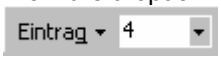
	A	B	C	D	E	F	G
1	<Overwrite>						
2	<NoPrint>						
3							
4		Datum	Strom	Oel	Temp		Oel-Eergie
5		01.01.00	57	57	57		571.71
6		02.01.00	77	66	78		661.98
7		03.01.00	50	27	79		270.81
8		04.01.00	66	50	50		501.5
9		05.01.00	36	40	27		401.2
10		06.01.00	60	29	30		290.87
11		07.01.00	37	38	28		381.14
12		08.01.00	71	76	68		762.28
13		09.01.00	30	30	30		300.9
14		10.01.00	79	57	29		571.71
15		11.01.00	41	19	25		190.57
16		12.01.00	43	57	57		571.71
17		13.01.00	26	24	18		240.72
18		14.01.00	67	59	62		591.77
19		15.01.00	60	21	55		210.63

2. Go back to the template via the **Window** menu. We now need some text to use for labeling.

3. Click **Run Context**, select **Database Name** and place this in B25.

4. Select **Main Objects | Node | Name** and place this in B26.

5. From the dropdown list, we now select **Data series, Name** under **Entry 4**

   and place this in B27.

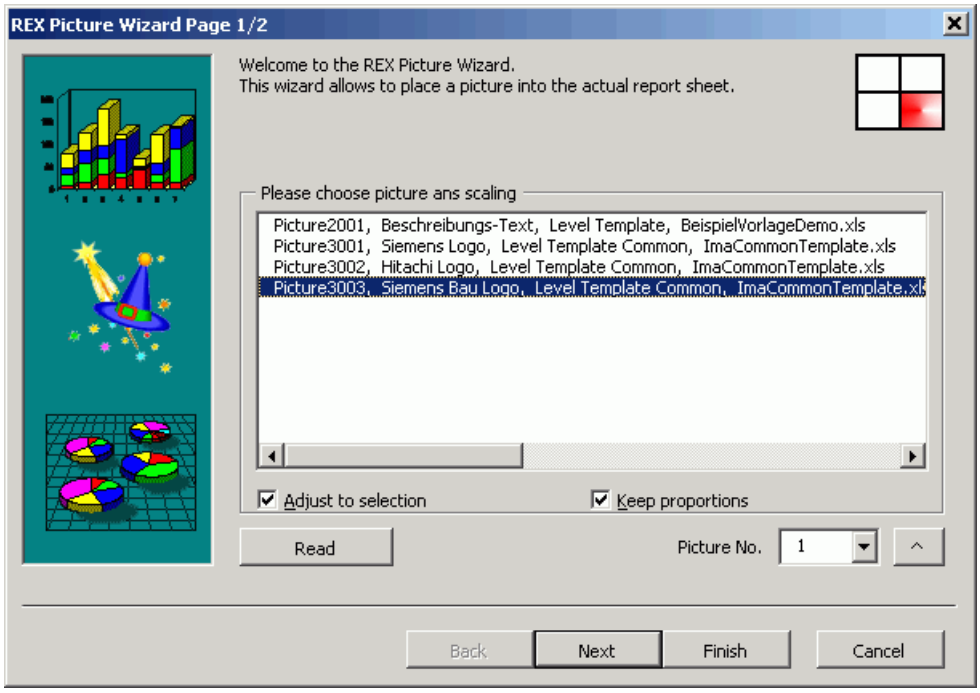
The next time we run a test, cells B25 to B27 contain the following:

Database User
Dataseries, Name(4)
Node, Name

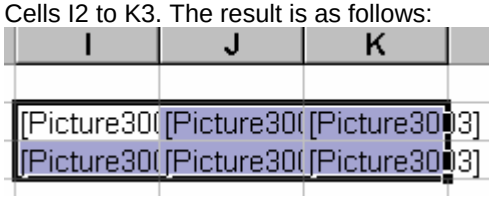
In other words, because the actual text is not known during the test run, the program simply uses the placeholders, but without square brackets.

We are now ready to create the report sheet.First, we change to Report sheet. (Remember to switch to the workbook **BeispielVorlage** ("SampleTemplate") via the **Window** menu).
Here, we want our Siemens logo to appear, top right.

Click the Picture Wizard icon: The following (or a similar) dialog box is displayed:

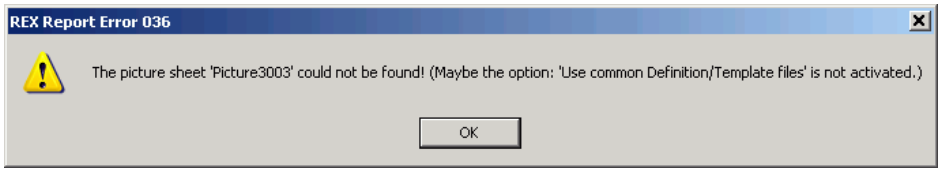

REX Picture Wizard Page 1/2
Welcome to the REX Picture Wizard.
This wizard allows to place a picture into the actual report sheet.
Please choose picture ans scaling
Picture2001, Beschreibungs-Text, Level Template, BeispielVorlageDemo.xls
Picture3001, Siemens Logo, Level Template Common, ImaCommonTemplate.xls
Picture3002, Hitachi Logo, Level Template Common, ImaCommonTemplate.xls
Picture3003, Siemens Bau Logo, Level Template Common, ImaCommonTemplate.xls
Adjust to selection
Keep proportions
Read
Picture No.
1
Back
Next
Finish
Cancel

We want to select Picture 3003, which we created earlier in the CommonTemplate. To place the picture in the required location, first click **Continue** and **Exit**, then select Cells I2 to K3. The result is as follows:



Note: The appearance of the picture can be influenced in various ways.
Adjust to selection = Fits the picture into the selected area.
Keep proportions = The picture is adapted to fit the selected area but not stretched or reduced.
Keep proportions check box cleared: The picture is imported in its original size.

Now let's run a test again:
This time we get the following error message:


REX Report Error 036
The picture sheet 'Picture3003' could not be found! (Maybe the option: 'Use common Definition/Template files' is not activated.)
OK

This is because we have to "tell" the template to use the CommonTemplate files. We do this via the **Settings** button: . Here, we select: **Use common Definition/Template files**. The picture is displayed the next time we run the test.

Important: After the test run, remember to return to the template: BeispielVorlage.xls!
Now we need a title. The report is to be called: "Energy Report".
Since we are creating a template, this text must be translatable. We enter the text in the **Translation** sheet, next to MyText1: Energy Report.
The following link goes on the Report sheet, in Cell A2: =Translation!C7

Next we need a spreadsheet containing the date, oil consumption, electricity consumption and total consumption kWh.
The worksheet should look like this:

	A	B	C	D
1				
2	Energie Report			
3				
4				
5				
6				
7	Datum	Strom	Oel	Gesamt-Energie
8	[Werte, Alle W	[Werte, All	[Werte, All	#VALUE!
9	[-"-]	[-"-]	[-"-]	#VALUE!
10	[-"-]	[-"-]	[-"-]	#VALUE!
11	[-"-]	[-"-]	[-"-]	#VALUE!
12	00.01.1900	0.00	0.00	0.00
13	00.01.1900	0.00	0.00	0.00
14	00.01.1900	0.00	0.00	0.00
15	00.01.1900	0.00	0.00	0.00
16	00.01.1900	0.00	0.00	0.00
17	00.01.1900	0.00	0.00	0.00
18	00.01.1900	0.00	0.00	0.00
19	00.01.1900	0.00	0.00	0.00
20	00.01.1900	0.00	0.00	0.00
21	##	0.00	0.00	0.00

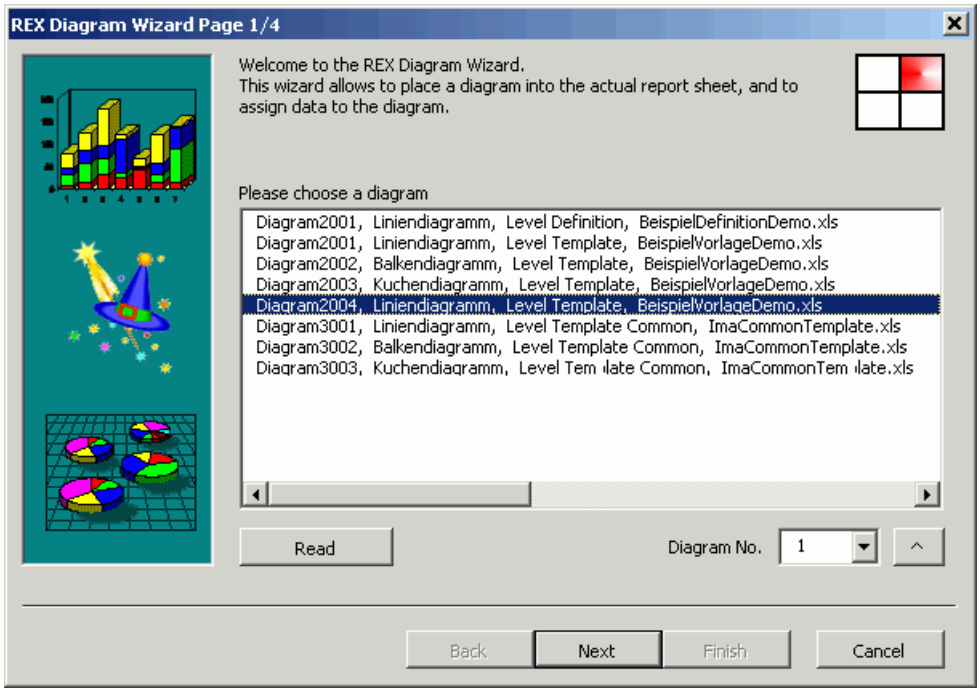
6				
7	Datum	Strom	Oel	Gesamt-Energie
8	**=Calculation1!B5**	**=Calculation1!C5**	**=Calculation1!D5**	**=Calculation1!G5+B8**
9	[-"-]	[-"-]	[-"-]	#VALUE!
10	[-"-]	[-"-]	[-"-]	#VALUE!
11	[-"-]	[-"-]	[-"-]	#VALUE!
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	##	0	0	0
22				

The second excerpt shows the links (always extend these down to Row 21).
Format the first column as **Date** and the remaining columns as **Number**.
In this case too, add the column titles to the Language sheet (same procedure as before).

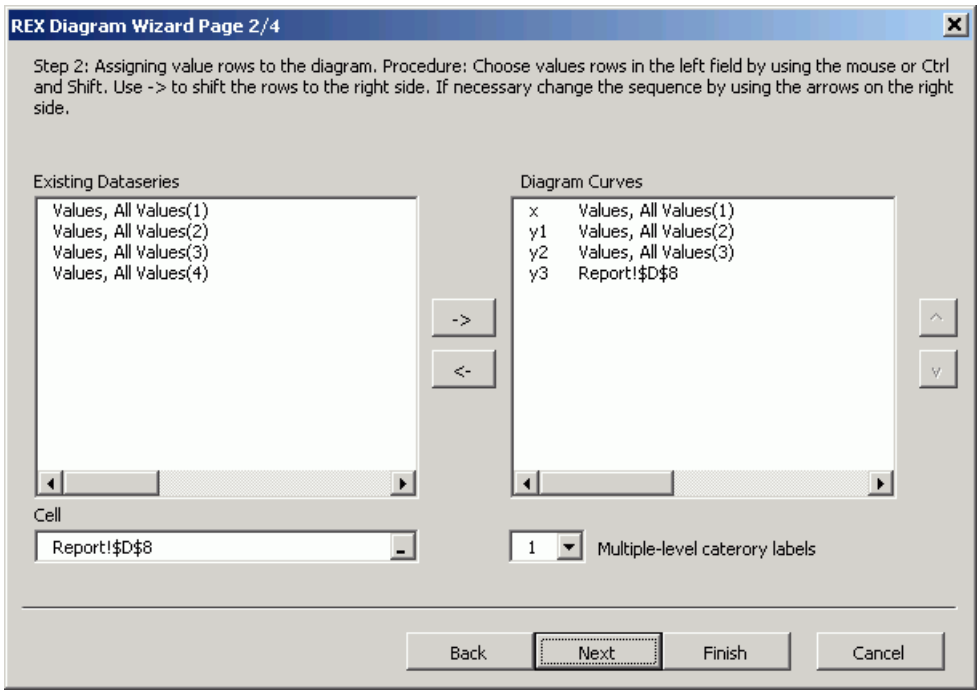
Check this with another test run…
Important: After the test run, return to the template BeispielVorlage.xls before continuing with your design.

The next step is to set up two diagrams. One will show energy consumption and the other the outdoor temperature.

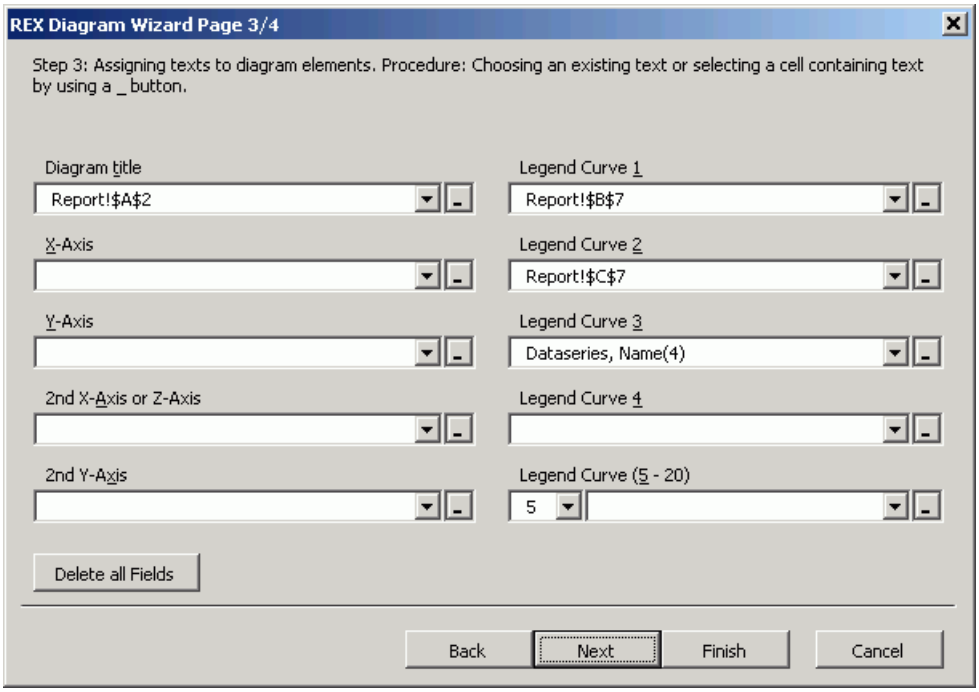
Start the **Diagram Wizard** . The following dialog box will be displayed:


REX Diagram Wizard Page 1/4
Welcome to the REX Diagram Wizard.
This wizard allows to place a diagram into the actual report sheet, and to assign data to the diagram.
Please choose a diagram
Diagram2001, Liniendiagramm, Level Definition, BeispielDefinitionDemo.xls
Diagram2001, Liniendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2002, Balkendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2003, Kuchendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2004, Liniendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram3001, Liniendiagramm, Level Template Common, ImaCommonTemplate.xls
Diagram3002, Balkendiagramm, Level Template Common, ImaCommonTemplate.xls
Diagram3003, Kuchendiagramm, Level Tem plate Common, ImaCommonTem plate.xls
Read
Diagram No.
1
Back
Next
Finish
Cancel

Select Diagram2004 and click **Next**.
Now select Data Series 1...3, and click **->** to copy the data series to the right pane.
Then click the minus button adjacent to the dropdown box under **Cell**, select the cell: "Report!$D$8" and click **->** to copy it into the right pane.

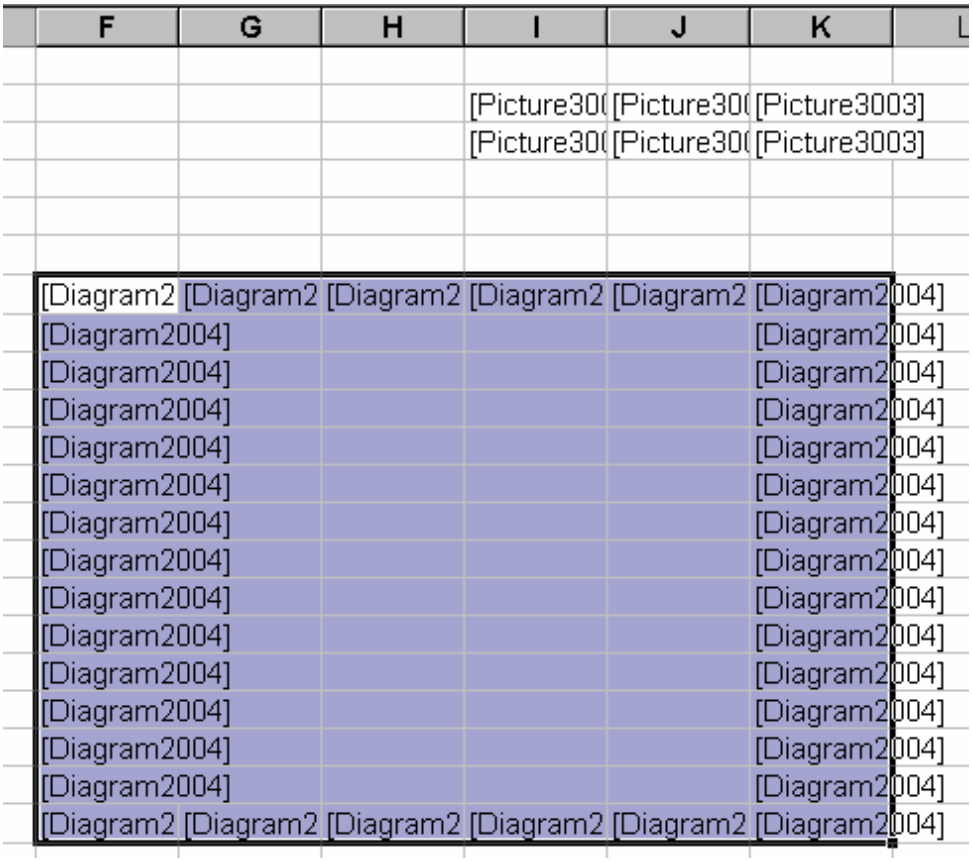

REX Diagram Wizard Page 2/4
Step 2: Assigning value rows to the diagram. Procedure: Choose values rows in the left field by using the mouse or Ctrl and Shift. Use -> to shift the rows to the right side. If necessary change the sequence by using the arrows on the right side.
Existing Dataseries
Values, All Values(1)
Values, All Values(2)
Values, All Values(3)
Values, All Values(4)
Diagram Curves
x Values, All Values(1)
y1 Values, All Values(2)
y2 Values, All Values(3)
y3 Report!$D$8
->
<-
Cell
Report!$D$8
1
Multiple-level caterory labels
Back
Next
Finish
Cancel

Click **Next**.



We will use the text from A2 as the **Diagram title** for our chart. (Select it with the minus-button.)
For **Legends 1** and **2**, use the text from B7 and C7, and for **Legend 3** use the data series name (click the down-arrow).

Click **Next** and **Finish**. Then select cells **F7-K21**. Result:



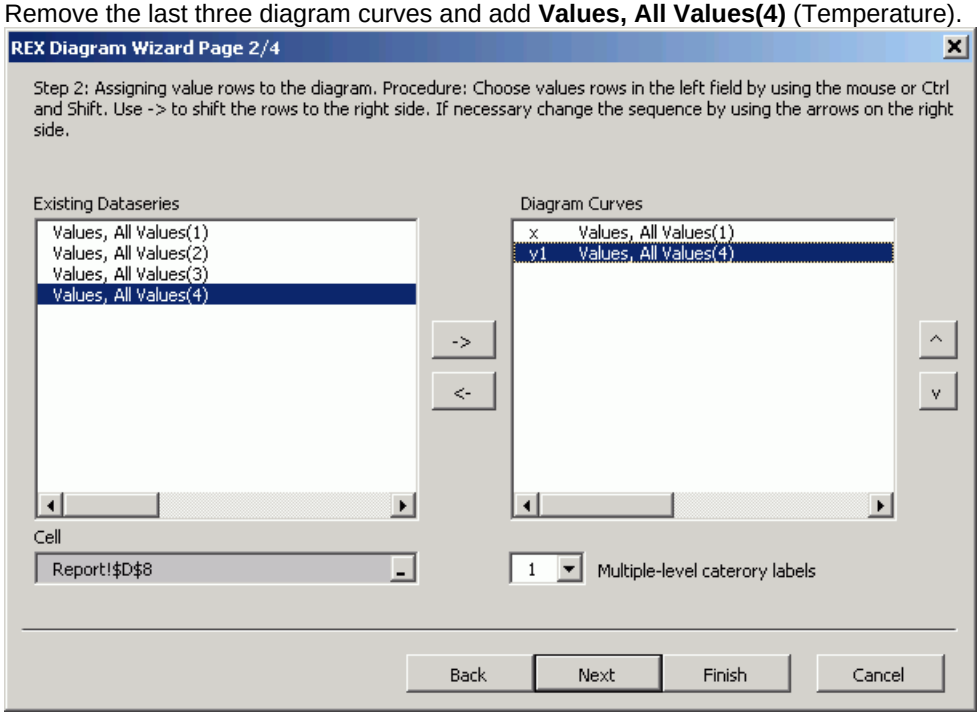
We would really like to see what the actual report looks like… so let's do another test run…

Important: After the test run, return to the template BeispielVorlage.xls before continuing with your design.

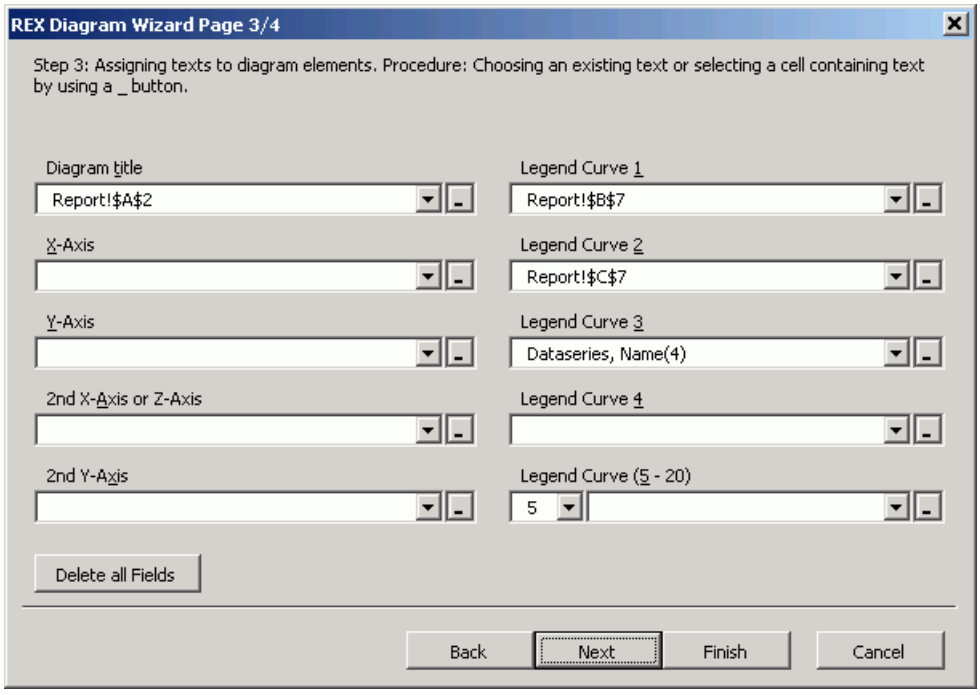
Now we want to set up a second diagram, for the temperature.

Place the cursor inside Diagram2004. (In this way, the values in 2004 will be used as suggested values.)

Start the **Diagram Wizard** . Select Diagram2001
Remove the last three diagram curves and add **Values, All Values(4)** (Temperature).


REX Diagram Wizard Page 2/4
Step 2: Assigning value rows to the diagram. Procedure: Choose values rows in the left field by using the mouse or Ctrl and Shift. Use -> to shift the rows to the right side. If necessary change the sequence by using the arrows on the right side.
Existing Dataseries
Values, All Values(1)
Values, All Values(2)
Values, All Values(3)
Values, All Values(4)
->
<-
Diagram Curves
x Values, All Values(1)
y1 Values, All Values(4)
^
v
Cell
Report!$D$8
1
Multiple-level caterory labels
Back
Next
Finish
Cancel

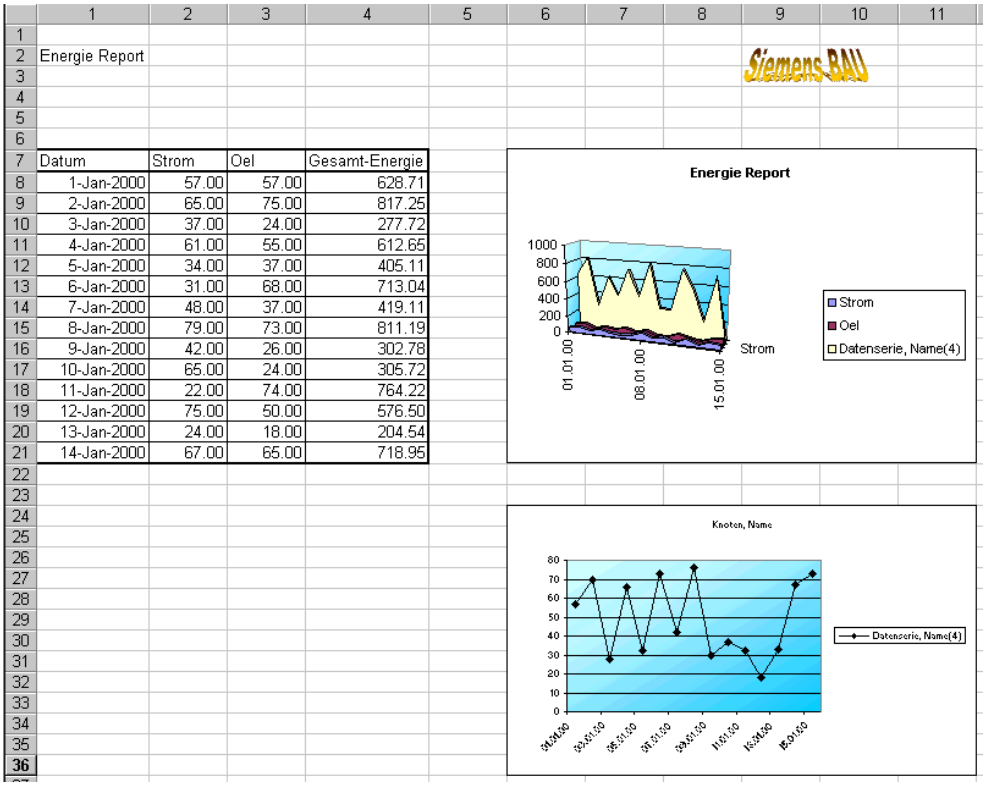
Make the following entries on Page 3 of the wizard:



Place the second diagram in cells **F24-K36**.

Another test run….

And this is the result we should see:



That completes the Siemens template. The users are supplied with this template. If they are satisfied with it, they do not need to do anything else to the report. To use it, they simply open it and save it as a definition in the Definitions directory.

Let us assume that our customers, the restaurant proprietors, do not like this report. They want to add the logo of the restaurant. They also heartily dislike the shade of blue used in the second diagram. Nor is the data correct, because they use a super-special type of oil with an energy value of 12.9 kWh per liter. (The template calculations are based on 10.03 kWh.).

Because our customers need several reports, we will define the restaurant logo in AdpCommonDefinition. This enables the logo to be used in all the reports.

3.5 Adding to the common definition file

We shall start by adding to the common definition folder.

Procedure: Click and in the Definition folder, select the file: ImaCommonDefinition.xls.
This template already contains three pictures (Siemens, Restaurant Good Hope and Restaurant Planet Fun). We want to use the "Restaurant Plant Fun" picture in our example, and simply modify the title. So, in Cell A3 of sheet Picture1501, write: Logo: Restaurant Planet Fun.
Click to save the change.

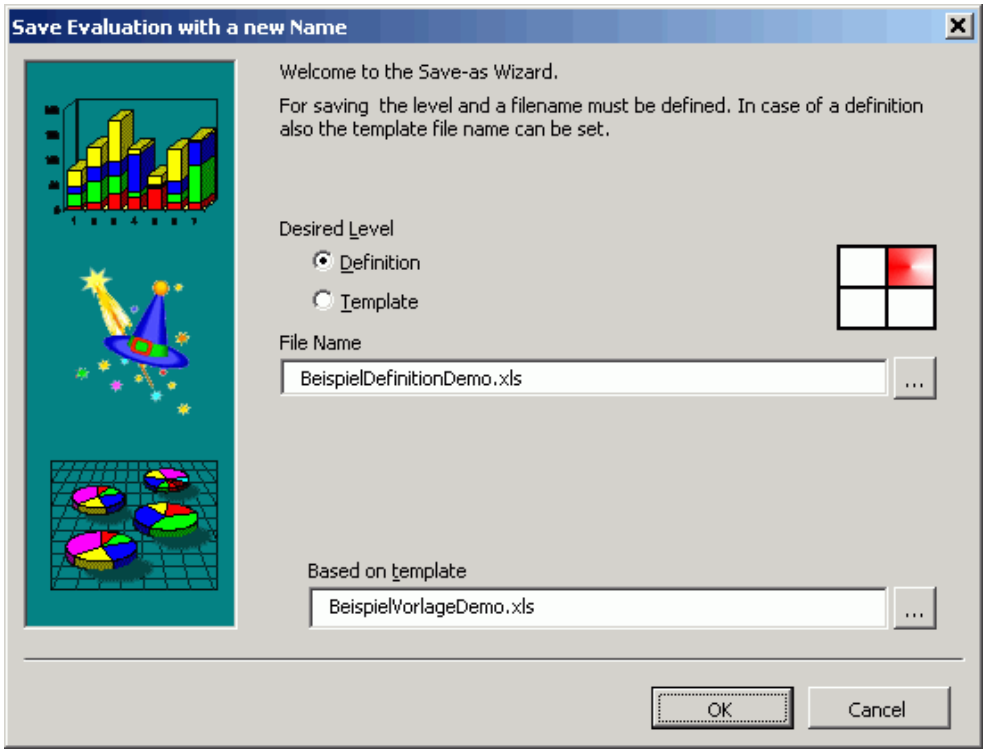
3.6 Creating a definition

The customer does not want to have to create a separate definition but simply wants to modify the existing template slightly. We therefore need to use the BeispielVorlage file as a blueprint.

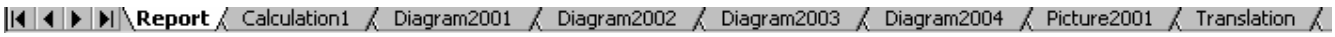
Steps:

Load BeispielVorlage.xls

Save the template as BeispielDefinition.
To do this, complete the dialog box as shown below. (Important: Select **Definition**.)



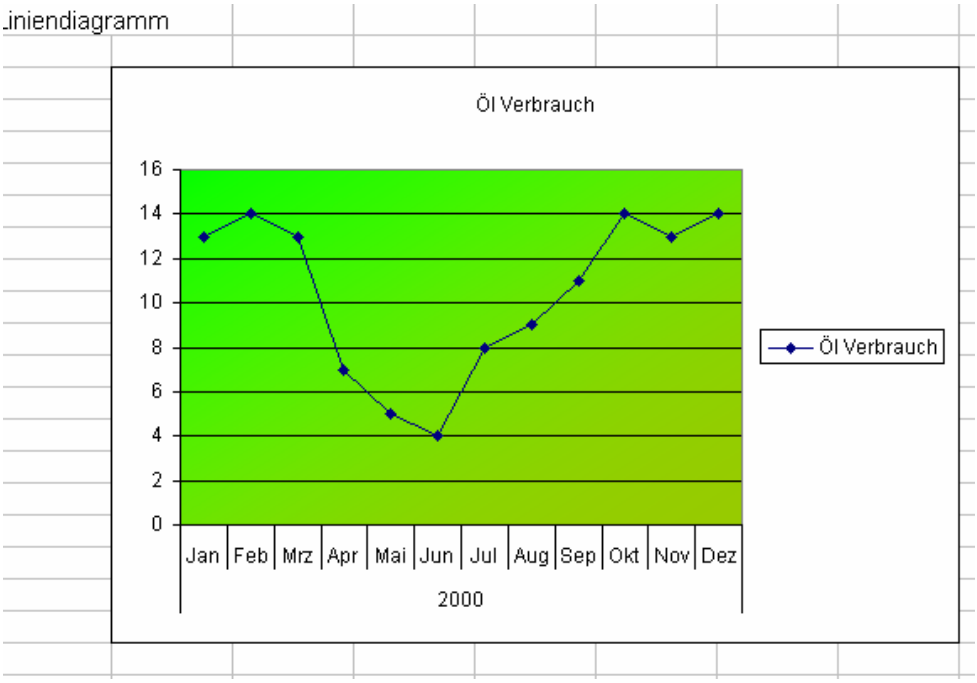
Now remove the sheets that are not required at the definition level:



These are: Diagram2002 to 2004 and Picture2001.

Normally, the definition level includes diagrams numbered from 1…999.
However, because we want Diagram2001 to be displayed in a different color, this diagram must be included in the definition. (See "Inherited features/Overwrite" under "Concepts2).

We will now change the color of this diagram. Right-click on the diagram, select **Format Plot Area** and change the colors to light green and green.

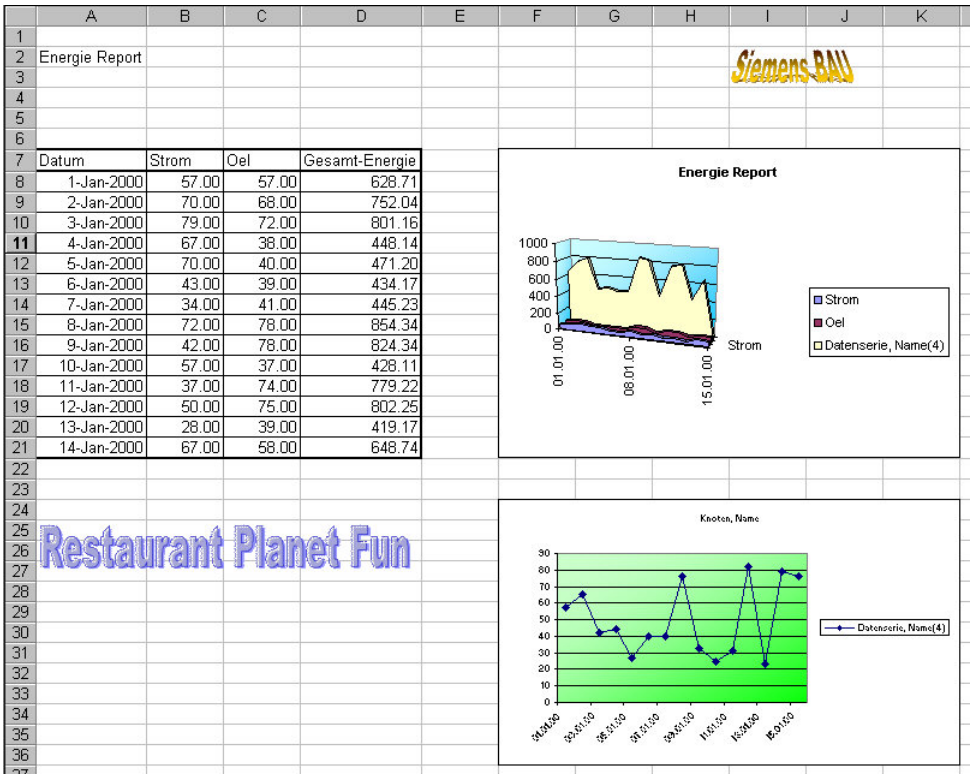


Time for another test run….
…and there we are: the second diagram is green.

Now we still need to add the restaurant logo.

We already know how to add a logo. Picture wizard: Insert Picture1501 in Cells A25-D30.

The result of the test run is shown below.



Now all that remains is to deal with the high-octane oil. Go to the Calculation1 sheet. Change the constant 10.03 in cell **G5** to 12.9. Then copy the cell to the other cells in that column, down to G19.

This change will have no effect if the <Overwrite> flag is enabled. We can disable the flag by writing <DoNotOverwrite>. (We could also delete the cell.)

The test run now shows slightly higher total energy values.

The active use of the sheet Calculation1 at the definition level does have a disadvantage, of course: If Siemens enhances the Calculation sheet in any way, the customer will not be able to take advantage of this. This is why, for unmodified Calculation sheets, an <Overwrite> flag must be set in cell A1. This ensures that the Calculation sheet from the template is used.
It would be helpful to design the template in such a way that additional calculations for the customer are made on a separate sheet. In this way, any changes to the template would be reflected in the customer report too.

3.7 Translation

We have nearly finished… Of course, the report still has to be translated. To do this, we start by loading BeispielVorlage.xls and clicking: .

The display is as follows:

	A	B	C
1	*Translation for Report: BeispielVorlage*		
2			
3	Sequence: A: Identifier, B: German, C: English, D: Danish, E: Dutch, F: Frer		
4			
5	**Identifier**	**GER**	**ENG**
6			
7	MyText1	Energie Report	
8	MyText2	Datum	
9	MyText3	Strom	
10	MyText4	Oel	
11	MyText5	GesamtEnergie	
12			
13			

All text in red now needs to be translated. Here, we shall only translate the text into English, because this "appetizer" version only supports English and German.

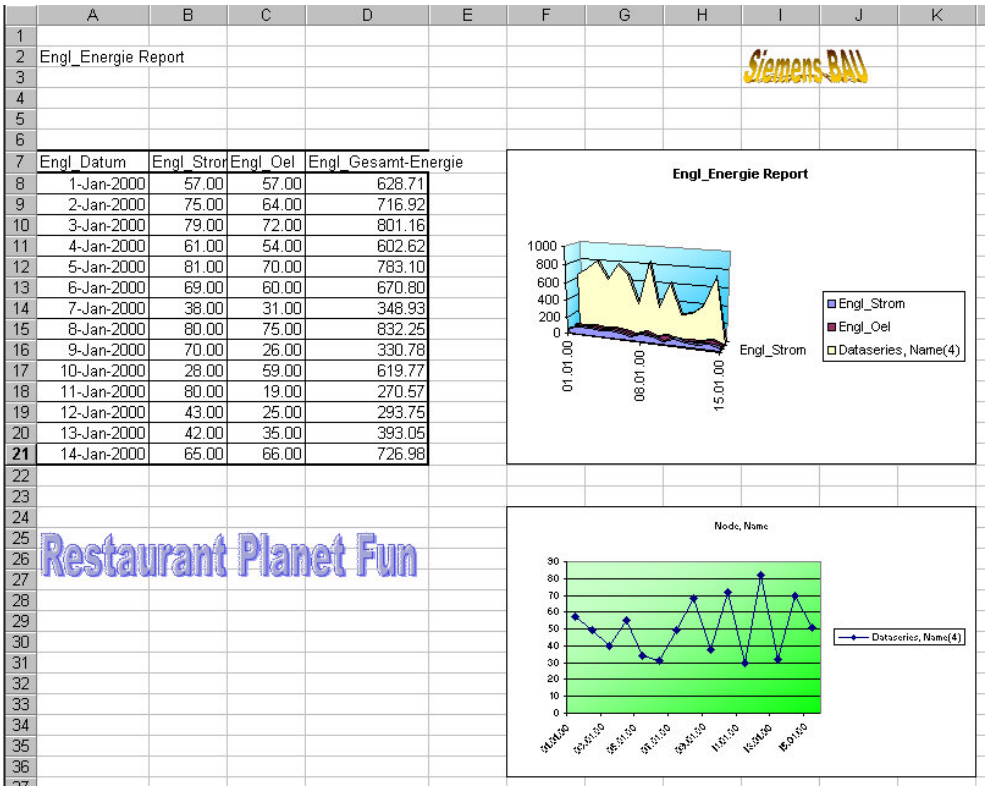
Note: If someone has already worked through this tutorial, then the translated text will already be in file.

To avoid turning this exercise into hard work, we shall simply place the prefix Engl_ in front of each item of text.
We are also going to change the text color to black (or blue) so that next time, we can see what has been translated already.

	A	B	C	
1	*Translation for Report: BeispielVorlage*			
2				
3	Sequence: A: Identifier, B: German, C: English, D: Danish, E: Dutch, F: French, G:			
4				
5	**Identifier**	**GER**	**ENG**	**DAN**
6				
7	MyText1	Energie Report	Engl_Energie Report	
8	MyText2	Datum	Engl_Datum	
9	MyText3	Strom	Engl_Strom	
10	MyText4	Oel	Engl_Oel	
11	MyText5	GesamtEnergie	Engl_GesamtEnergie	
12				
13				

Click Save and change the language (**Advanced, Change to English**), log out, log in again and reload our "BeispielDefinition". (Note that this function is not available in the release version.)

Test run…..



And the translated words really are displayed!

With the existing configuration, all the template diagram pictures and RawData sheets are saved with the final report. The files are therefore very large.
The following setting deletes these sheets at the end of the process:

Select **Settings: Delete sheets**

The final reports are now much slimmer.

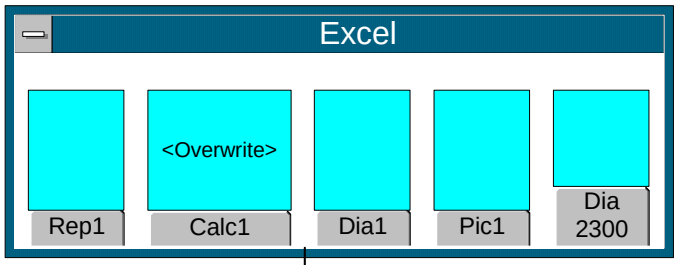
That's it. The four-stage report is complete…

4 Description of individual functions

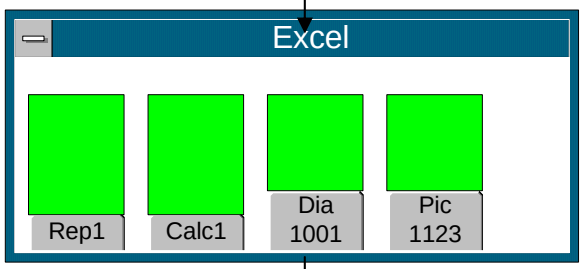
4.1 Inherited features/Overwrite concept

4.1.1 Sheets

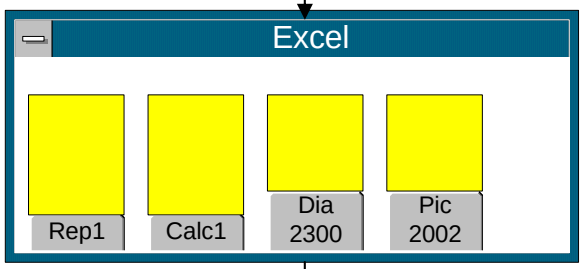
Definition Level



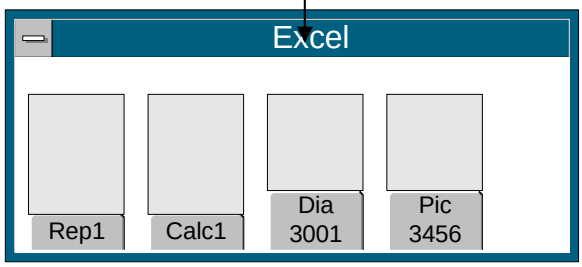
Definition Level, Common



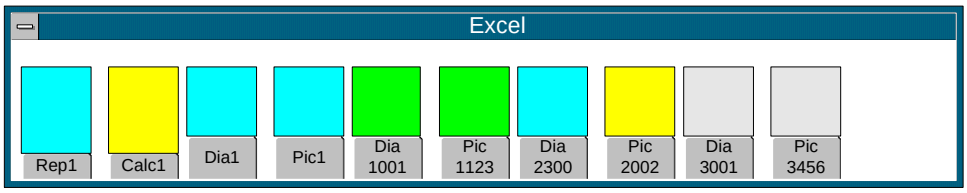
Template level



Common Template level



Result: Final report
(graphic reduced in size)



All pictures: Visio 2000

How it works

All sheets not included in the Definition file are copied to the Definition file from other levels. Normally, existing sheets are not overwritten (Dia2300). An existing sheet is overwritten, however, if cell A1 contains an <Overwrite> flag. (<Overwrite(C)> also uses sheets from the Common level for overwriting).
Refer also to the section " Calculation1" for an explanation of the Overwrite function.

4.1.2 Elements of the report

Report elements can also be inherited/ Here is an example of some report elements:

[Datenbank Name]	[Werte, Alle Werte(1)]	[Diagram1	[Diagram1	[Diagram1	[Diagram1]
[Datenbank Benutzer]	[-"-]	[Diagram1]			[Diagram1]
[Aktion (Zahl)]	[-"-]	[Diagram1]			[Diagram1]
	[-"-]	[Diagram1]			[Diagram1]
[Job, Name]		[Diagram1]			[Diagram1]
[Knoten, Textfeld-Überschriften]		[Diagram1]			[Diagram1]
[-"-]		[Diagram1	[Diagram1	[Diagram1	[Diagram1]
[-"-]					
[-"-]		[Picture1]	[Picture1]	[Picture1]	[Picture1]
		[Picture1]			[Picture1]
[Kopfzeile links]	[Datenserie, Name(1)]	[Picture1]			[Picture1]
Kopf-/Fusszeile hier eintragen.		[Picture1]	[Picture1]	[Picture1]	[Picture1]

Rule:
Report elements at the lower levels (DefinitionCommon, Template, TemplateCommon) are copied into the Definition file if both sheets have the same name and the report elements do not exist at the Definition level, or if they are of different sizes.

The result could be something like this:

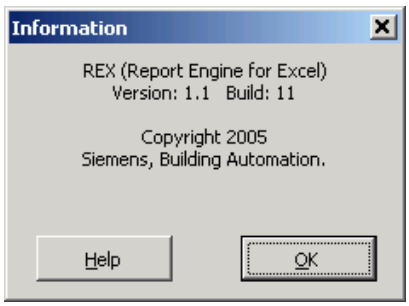
[Datenbank Name]	[Werte, Alle Werte(1)]	[Diagram1	[Diagram1	[Diagram1	[Diagram1]	
[Datenbank Benutzer]	[-"-]	[Diagram1]			[Diagram1]	
[Aktion (Zahl)]	[-"-]	[Diagram1]			[Diagram1]	
	[-"-]	[Diagram1]			[Diagram1]	
[Job, Name]		[Diagram1]			[Diagram1]	
[Knoten, Textfeld-Überschriften]	[Werte, Alle Werte(2)]	[Diagram1]			[Diagram1]	
[-"-]	[-"-]	[Diagram1	[Diagram1	[Diagram1	[Diagram1]	
[-"-]	[-"-]					
[-"-]	[-"-]	[Picture1]	[Picture1]	[Picture1]	[Picture1]	
		[Picture1]	[Picture1]	[Picture1]	[Picture1][	[Picture1]
[Kopfzeile links]	[Datenserie, Name(1)]	[Picture1]	[Picture1]		[Picture1]	[Picture1]
Kopf-/Fusszeile hier eintragen.		[Picture1]	[Picture1][	[Picture1]	[Picture1]	[Picture1]
			[Picture1]	[Picture1]	[Picture1]	[Picture1]
[Diagram1	[Diagram1	[Diagram1	[Diagram1]			
[Diagram1]			[Diagram1]			
[Diagram1]			[Diagram1]			
[Diagram1]			[Diagram1]			
[Diagram1]			[Diagram1]			
[Diagram1]			[Diagram1]			
[Diagram1	[Diagram1	[Diagram1	[Diagram1]			

(The use of red here is intended only for greater clarity).

Report elements are passed down automatically. There is no need for any flags, such as <Overwrite> for example. However, this means that report elements in the Common levels are always inherited.

About / Help When the installation of REX is complete, only the following two buttons appear:

The **Information** box is displayed by clicking the paint-pot icon.



Help is integrated into the **Information** dialog box. The **Help** button will later invoke an HTML Help file without context-sensitive links.
The reason for this unusual packaging of **About** and **Help** is that it allows users to find out, before logging on, about the logon procedure and to obtain other information about the project.
Clicking the first icon in the other command bars also causes the same About box to be displayed.

The various command bars are displayed when the user clicks the **Logon** button. The name of the button then changes to **Logoff**. When the user logs off, all the buttons disappear again, except for **About** and **Logon.**

4.2 Command bars

After successful logon, two (or three) command bars are displayed:

The titles of these bars cannot be translated (a limitation of the Add-In). Normally the bars are placed at the top of the screen adjacent to the other bars. The titles are then not visible.
The command bar **REX Reporting** is only displayed here if it has been enabled under **Settings**.

The command bars all include the **About** button as the first icon.

The **REX Design** and **REX Engineering** bars can only be used after logon. If a user enables either of these bars with an Excel command (by right-clicking in the command bar area) and then clicks on an icon, the logon procedure is carried out first. The **Reporting** bar can be used without the need to log on.

Note: The normal Excel icons are not modified by the Add-In. There are two exceptions to this, however: The two standard Excel icons: do not work if a REX Definition/Template is loaded. (A message is displayed to the effect that the Add-In icons must be used).

4.2.1 The Design command bar

The **Design** command bar is required for designing a report.

The following three options are mutually exclusive like radio buttons .
In other words, only one can be active at any one time.

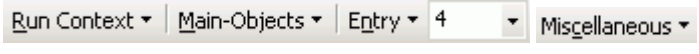
- After logon, the first button (**Insert Elements**) is active. In this state, all the various elements of the report can be inserted. To cancel the insertion of an element (red text already visible), click this button. (**Cancel** does not work. This is because it was not so easy to reroute the keys in Excel.)
- The second button (**Delete Elements**) allows you to delete inserted elements completely. The use of the <Del> key for deletion only deletes the text, but not the element. "Destroying" cells in this way (right-click and **Delete**) causes faulty links, which are picked up by the Add-In, but which in certain cases can have some strange effects. In other words, ALWAYS use the second button to delete elements.

  Procedure: Enable the button and click/select the element to be deleted. Answer the prompt with **Yes**. If more than one element is included in the selection, you can then choose which element you want to delete.
- The third button (**Display element**) allows you to display the association between diagrams and elements.

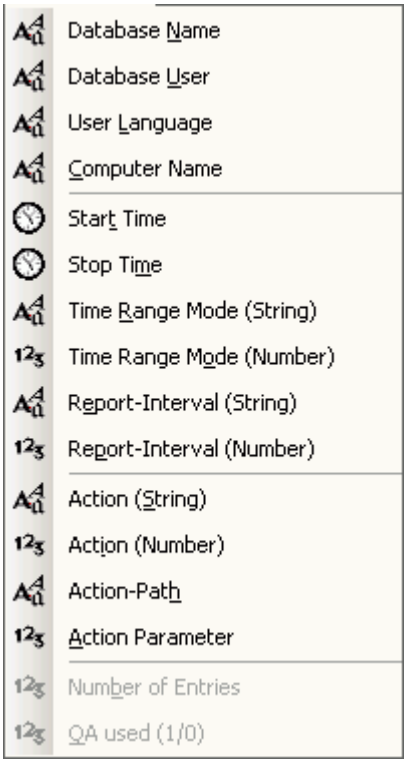
  Method: Activate the button and click a diagram. The diagram and all elements used by that diagram will be displayed in blue. If you click an element, then all diagrams that use this element will be displayed in color. If you click on an element of which there are several instances (e.g. 3 x Picture1) then all 3 elements are colored. This color can be canceled by clicking on a cell in which there is no element.
  Important: This function remains enabled. As soon as it is no longer needed, it should be disabled. In certain cases (e.g. when "demolishing" a colored cell with right-click and **Delete**) the blue markings remain behind.
  Note: After using **Print Preview**, the function **Display Elements** works very slowly. (a limitation of Excel)

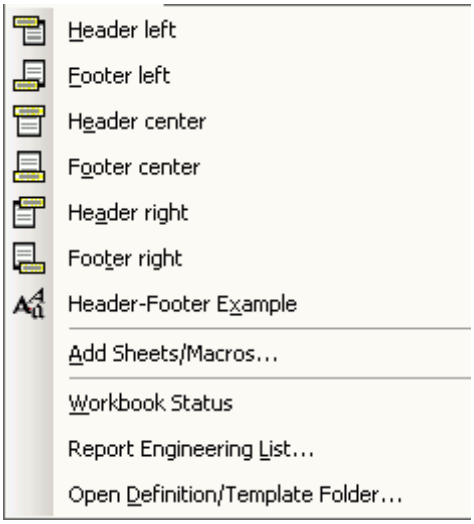
The next button (**Refresh Display**) can be used to regenerate the representation of the elements in text form. This is useful, for example, after deletion of an area of the sheet which also contained elements (select and **Delete**). The text is redisplayed by use of this button.

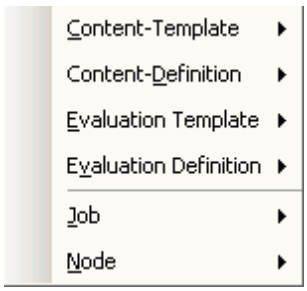
The buttons below are used to insert cells and column elements.



The following shows all the elements that can be inserted:





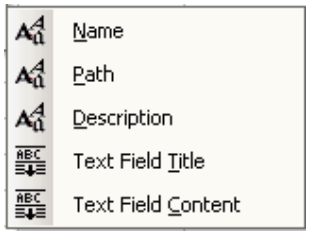


Contents of **Template**

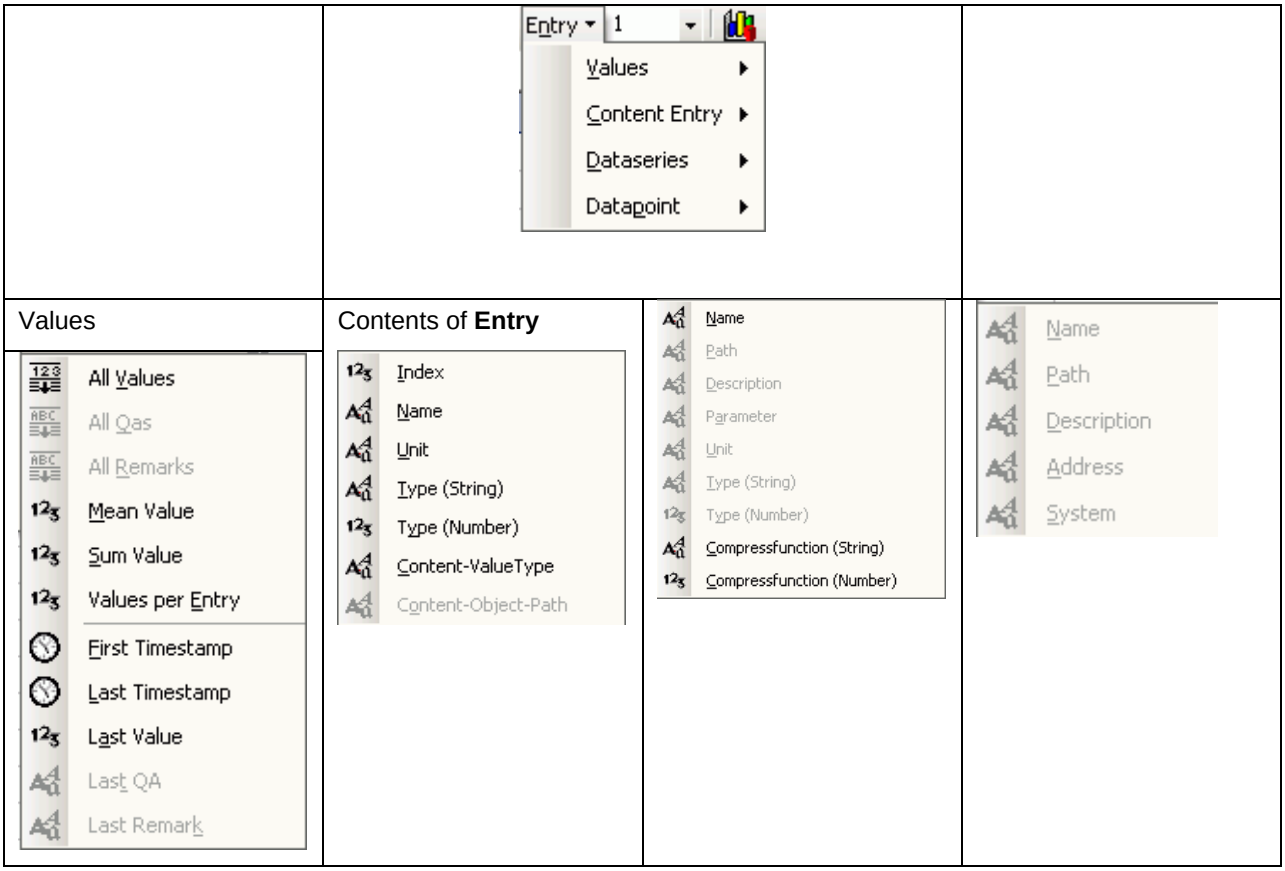
Contents of **Definition**

Evaluation template

Evaluation definition



For CC only a limited number of these elements is available. The others are "grayed out" and cannot be accessed.



Procedure: Select menu item (under **Entry**, first select the required data series). A text entry in red appears in the top left of the sheet. Example:

Now click with the cursor in the cell in which you want to place the element. In the case of column items (All Values, All QAs, All Comments, and text fields) click on the cell in which the topmost element is to appear.

To cancel the insertion process, click

Inserted elements appear as follows:

[Database Name]		[Start Time]	
[Values, All Values(1)]			
[-"-]			
[-"-]	[Values, All Values(2)]	[Header left]	
[-"-]	[-"-]	Enter Header/Footer here.	
	[-"-]		
	[-"-]		

Text in square brackets indicates which element is concerned and where it is located. When it is run, the Add-In then generates a real data entry from the element. The [-"-] indicate that further values are to be filled in, vertically. The number of values depends on the data delivered by the PdmRunner. The curved brackets are used only for elements belonging to a data series. [Values, All QAs(1)] indicates that this is where the

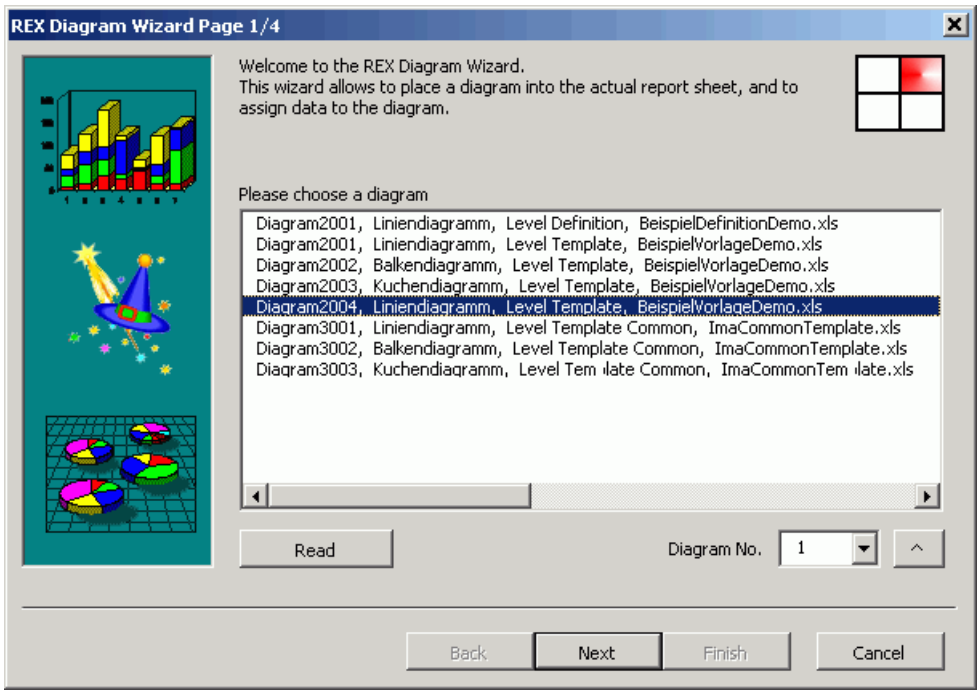
QAs for the first data series in the RawData sheet are to be inserted. The question of which series comes first in the RawData sheet is defined in CC.

4.2.1.1 Creating a diagram element

Basic principles

Diagrams in REX always consist of two parts: the diagram template and the diagram element. The template defines the appearance of the final diagram, and the element defines the content of the diagram. The diagram templates are in sheets named "Diagram" followed by a number, e.g. "Diagram1500". When creating a new report file, three of these "Diagram" sheets are created automatically as examples. The appearance of these diagrams can be changed as required. The modified diagrams can then be selected in the chart wizard. (With unusual diagrams, there are a few restrictions. These are described later.

Click the icon to start the chart wizard. You need to use this to insert diagram elements. (When it is run, the Add-In then generates an actual chart from the element.) When the wizard is started, the following dialog box is displayed:


REX Diagram Wizard Page 1/4
Welcome to the REX Diagram Wizard.
This wizard allows to place a diagram into the actual report sheet, and to assign data to the diagram.
Please choose a diagram
Diagram2001, Liniendiagramm, Level Definition, BeispielDefinitionDemo.xls
Diagram2001, Liniendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2002, Balkendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2003, Kuchendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2004, Liniendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram3001, Liniendiagramm, Level Template Common, ImaCommonTemplate.xls
Diagram3002, Balkendiagramm, Level Template Common, ImaCommonTemplate.xls
Diagram3003, Kuchendiagramm, Level Tem plate Common, ImaCommonTem plate.xls
Read
Diagram No.
1
Back
Next
Finish
Cancel

The graphic, top right, indicates by means of the "report cube" the type of file loaded (definition or template).

If the cursor is positioned on a diagram element when the chart wizard is started, the following text is displayed: **Default values from:**. This means that in this case, the diagram settings under the cursor will be used as default values. The check box **Overwrite diagram** lets you overwrite an existing diagram without having to go through the selection process again. This is particularly useful when modifying an existing diagram.

The diagram dialog box displays all the diagrams found. The following rules are applied in this process:

1. First, the settings are checked. Unless the **…comprehensive list** check box is selected, only diagrams containing the loaded file are displayed. Otherwise:

2. If a template is loaded, only the template diagrams and the diagrams from CommonTemplate are displayed.
3. If a definition file which is linked to a template is loaded, diagrams from the following files are displayed: the loaded file, the Common Definition file, the linked template and CommonTemplate.
4. If a definition file is loaded which is NOT linked to any template, diagrams from the following files are displayed: the loaded file, the Common Definition file, all templates and CommonTemplate.

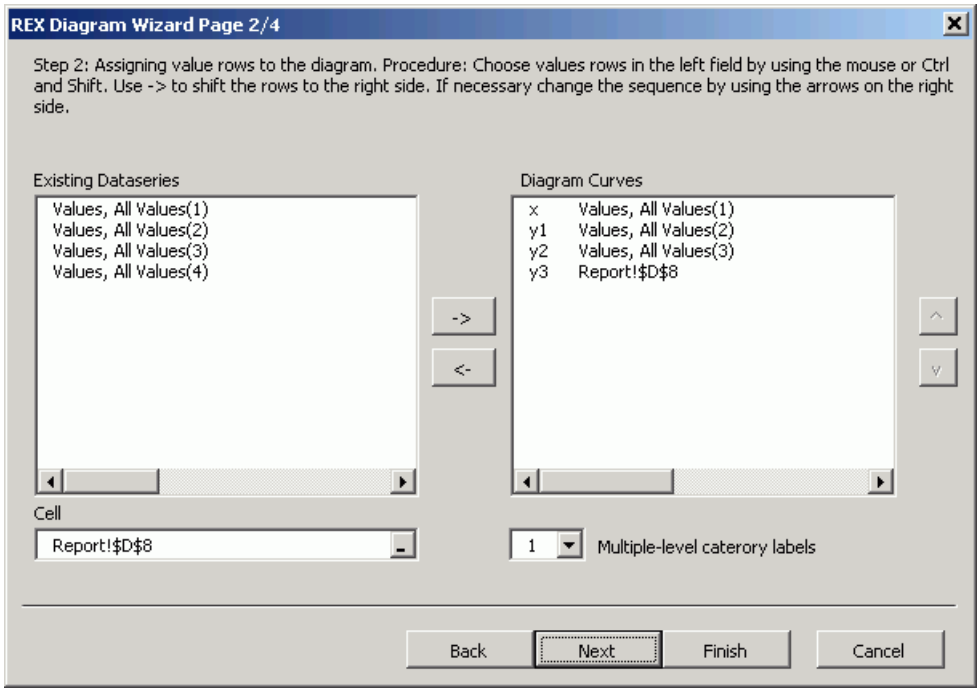
Only diagrams from sheets with names starting "Diagram" followed by an integer are included. Example: Diagram1500.

Clicking the **Read** button loads the diagram list again. In this case, the setting "**Diagram/Picture Wizard builds up a comprehensive list"** is ignored. In other words, a complete list is always loaded.

The input item **Diagram No.** allows you to select a diagram which is not on the list. For this purpose, select the number with the **v** button and click **^** to insert it.

The **Finish** button is always inaccessible ("grayed") here. There is still insufficient data to generate the diagram.

Click **Next** to display the next dialog box:


REX Diagram Wizard Page 2/4
Step 2: Assigning value rows to the diagram. Procedure: Choose values rows in the left field by using the mouse or Ctrl and Shift. Use -> to shift the rows to the right side. If necessary change the sequence by using the arrows on the right side.
Existing Dataseries
Values, All Values(1)
Values, All Values(2)
Values, All Values(3)
Values, All Values(4)
->
<-
Diagram Curves
x Values, All Values(1)
y1 Values, All Values(2)
y2 Values, All Values(3)
y3 Report!$D$8
^
v
Cell
Report!$D$8
1
Multiple-level caterory labels
Back
Next
Finish
Cancel

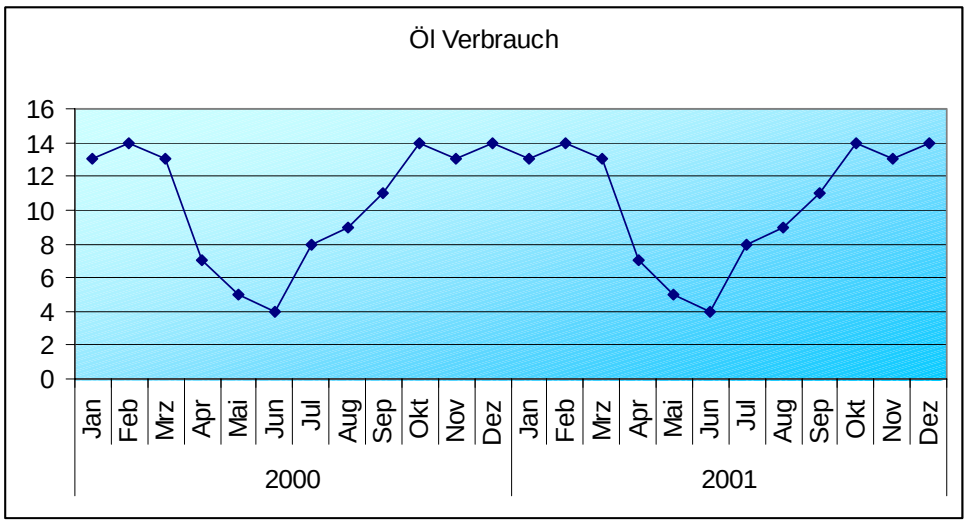
The left pane, **Existing Dataseries,** shows all the column elements (data series or time series) available in the current file.
To choose a series for the diagram, select it and click **->**. Double-click the series for the same effect. To choose several series simultaneously, first select the required series and then click **->**. A maximum of 20 curves can be selected per diagram.

Diagram curves can be removed again with the **<-** button. (Select the curve to be removed and click **<-**.

The selected data series are numbered automatically (x, y1, y2....). These series then become an X curve, a Y1 curve etc. It makes sense if the X curve is a time or date series. If, for example the **Values, All Values(4)** is the date series, this series can be moved upward in the list with the **^** button. Procedure: Select curve and move with **^**.

The data series are not always available as Add-In elements. Example: Two outside temperatures are to be displayed as an average value. To achieve this, a third series must be created with the formula (A1 + B1)/2. By use of the **Cell** input field, this calculated series can then also be used as a curve. (All cells that contain values are then also used underneath the selected cell.)

Multi-level categories:
This is best explained by an illustration:



The X-axis is made up of two levels: months and years. The associated data is as follows:

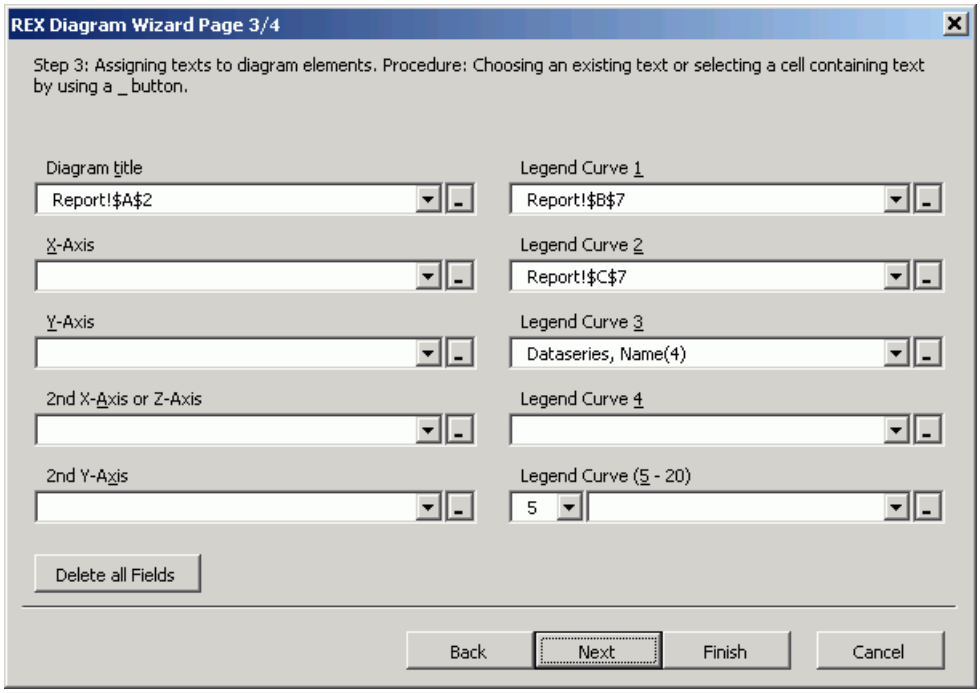
Oil consumption		
2000	Jan	13
	Feb	14
	Mar	13
	Apr	7
	May	5
	Jun	4
	Jul	8
	Aug	9
	Sep	11
	Oct	14
	Nov	13
	Dec	14

Oil consumption		
2001	Jan	13
	Feb	14
	Mar	13
	Apr	7
	May	5
	Jun	4
	Jul	8
	Aug	9
	Sep	11
	Oct	14
	Nov	13
	Dec	14

The input field **Multiple-level category labels** is used to create diagrams of this type. An input of "2" indicates that two levels are represented. For this purpose, as in the example above, the second (and any other) series must be located to the left of the selected X-series.

In this dialog box, the **Finish** button becomes active again as soon as a curve is selected. This means that there is sufficient data available to create the diagram, and

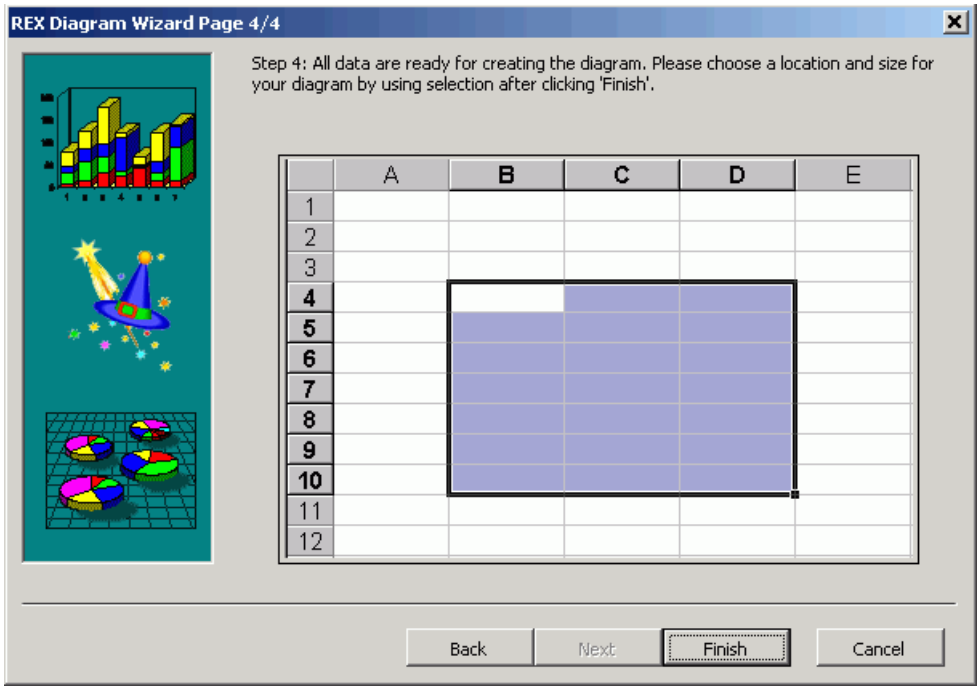
that the process *could* therefore be completed… However, there are still two more dialog boxes. Click **Next** to display the following:



Here you can now select all the text associated with the diagram. Again, you can use the **v** button to select report elements, or – to select free cells.
"Legends" are the text labels next to the diagram. They describe the individual curves. A diagram may contain a maximum of 20 curves. There is therefore a maximum of only 20 legends. Certain diagram types allow the use of two X or Y-axes. Text can be assigned to the axes in these diagrams by use of the fields **2nd Y-axis** or **2nd Y-axis**.

The **Delete All** button lets you delete all fields at once.

Click **Exit** to create the diagram element. Click **Next** to display an information dialog box:



The dialog box shows the user what to do next. Select a cell area with the cursor. The diagram will then be fitted into the selected area.

Tip: If only one cell is selected as the target location (e.g. D15), then the diagram will be inserted in its original size (as in the diagram template), starting at Cell D15.

Note: Diagrams should not be placed above a text item. The text will be corrupted when the final report is created.

Diagram restrictions

The following diagrams are subject to restrictions:

Pie, PieExploded, 3DPie, 3DPieExploded, PieOfPie, BarOfPie
These diagrams cannot display labels for X and Y axes. Furthermore, these diagrams can use a maximum of only two series.

Doughnut, DoughnutExploded, Radar, RadarMarkers, RadarFilled
These diagrams cannot display labels for X and Y axes.

Surface, SurfaceTopView, SurfaceWireframe, SurfaceTopViewWireframe
The legends in surface diagrams cannot be set by macro: instead they must be placed above the series. Example
Legend Textx
[Values, AllValues(3)]

Bubble, Bubble3Deffect
Bubbles need an additional column for the bubble size. Example:

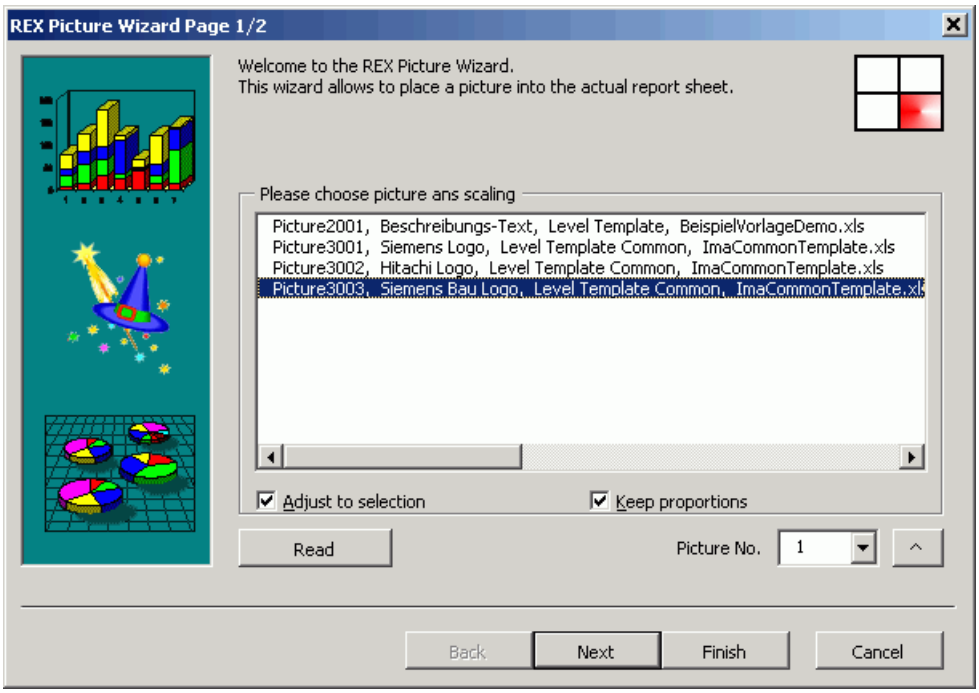
(Date)	*(Value)*	*(Bubble size)*
Datum	Wert	Grösse der Blasen
[Werte, Alle \	[Werte, Alle \	2
[-"-]	[-"-]	3
[-"-]	[-"-]	4
[-"-]	[-"-]	5
		6
		7
##		8
$$	$$	9

4.2.1.2 Creating a picture element

Basic principles

Pictures in REX always consist of two parts: the picture template and the picture element. The template contains the picture and the element contains the location and size of the picture. The picture templates are in sheets named "Picture" followed by a number, e.g. "Picture1500". When creating a new report file, three of these "Picture" sheets are created automatically as examples.

Click the icon to start the picture wizard. You need use this to insert picture elements. (When it is run, the Add-in then inserts a proper picture).
When the wizard is started, the following dialog box is displayed:


REX Picture Wizard Page 1/2
Welcome to the REX Picture Wizard.
This wizard allows to place a picture into the actual report sheet.
Please choose picture ans scaling
Picture2001, Beschreibungs-Text, Level Template, BeispielVorlageDemo.xls
Picture3001, Siemens Logo, Level Template Common, ImaCommonTemplate.xls
Picture3002, Hitachi Logo, Level Template Common, ImaCommonTemplate.xls
Picture3003, Siemens Bau Logo, Level Template Common, ImaCommonTemplate.xl
Adjust to selection
Keep proportions
Read
Picture No.
1
Back
Next
Finish
Cancel

The graphic, top right, indicates by means of the "report cube" the type of file loaded (definition or template).

If the cursor is positioned on a picture element when the picture wizard is started, the following text is displayed: **Default values from**: . This means that in this case, the picture settings under the cursor will be used as default values. The check box **Overwrite picture** lets you overwrite an existing picture without having to go through the selection process again. This is particularly useful when modifying an existing picture.

The picture dialog box displays all the pictures found.
The following rules are applied in this process:

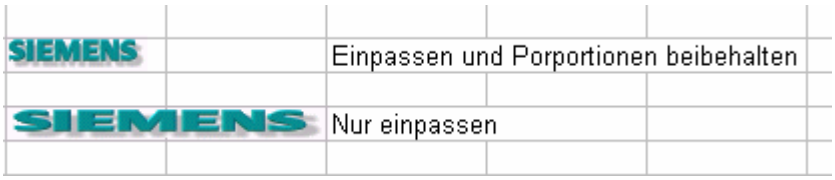
1. First, the settings are checked. Unless the **…comprehensive list** check box is selected, only pictures containing the loaded file are displayed. Otherwise:
2. If a template is loaded, only the template pictures and the pictures from CommonTemplate are displayed.
3. If a Definition which is linked to a template is loaded, pictures from the following files are displayed: the loaded file, the CommonDefinition file, the linked template and CommonTemplate.
4. If a Definition is loaded, which is NOT linked to a template, pictures from the following files are displayed: the loaded file, the CommonDefinition file, All templates and CommonTemplate.

Only pictures from sheets with names starting "Picture" followed by an integer are included. Example: Picture1500.

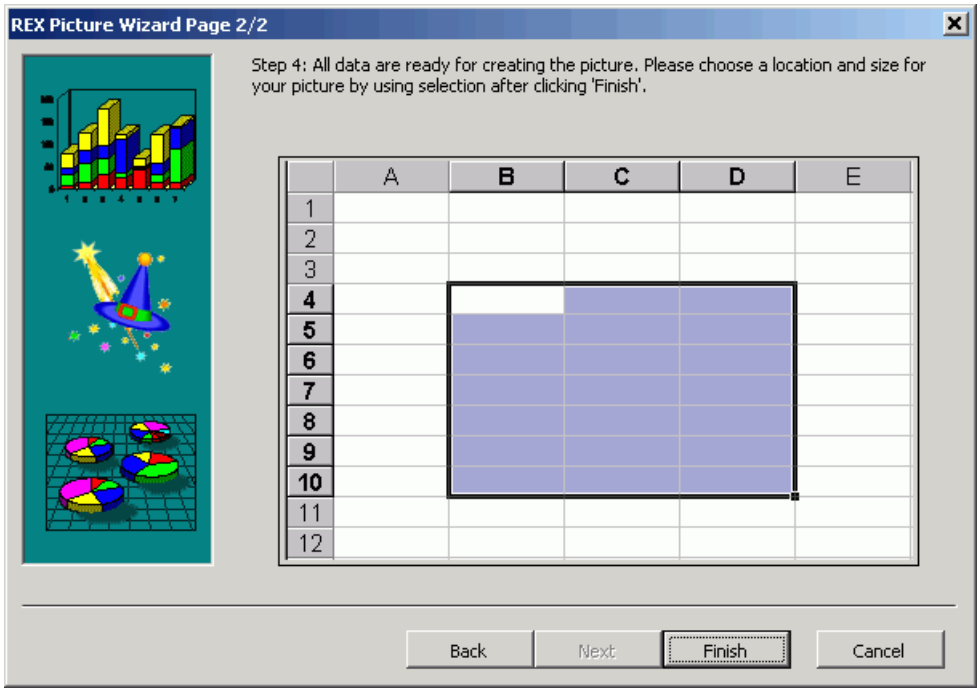
Clicking the **Load** button loads the list of pictures again. In this case, the setting "**Diagram/Picture Wizard builds up comprehensive list"** is ignored. In other words, a complete list is always loaded.

The input unit **Picture No.** allows you to select a picture which is not on the list. For this purpose, select the number with the **v** button and click **^** to insert it.

The check box **Fit to Selection** allows you to fit the picture to the size of the selected cells. Normally, the proportions of the picture are maintained in this case. However, if the check box **Keep proportions** is cleared, the picture will be "distorted" to make it fit exactly within the selected cell area. If both check boxes are cleared, the picture will be imported from the template sheet in its original size. Examples:



Click **Next** to display the same dialog box as for the chart wizard:



Here too, the dialog box shows the user what to do next. Select a cell area with the cursor. The picture will then be fitted into the selected area.

Diagram und Picture Number Convention:

There are diagrams and pictures at all 4 levels (Definition, Common Definition, Template and Common Template). To achieve a degree of order, all users should adhere to the following numbering scheme:

Definition :	0-999
Definition Common:	1000-1999
Template:	2000-2999
Template Common:	3000-3999

In this way, the level from which a diagram or picture originates is immediately clear. When new diagrams or pictures are inserted (**Miscellaneous | Sheets / Add Macros…**) the correct numbers are automatically suggested, according to the level (Definition / Template).

4.2.1.3 The "Miscellaneous" menu

This menu contains a conglomeration of functions. The first group comprises Headers and footers. These are two-line elements. Example:

[Header left]
Enter the header/footer here.

When the report is run, the text in the second line is entered in the right location under "Headers and Footers". The header/footer element is not deleted in this process. It must therefore be placed in a location where it will not disturb the user, e.g. outside the print area.
Important: Headers and footers must be defined separately for each sheet to be printed. In other words, the element [Header left] applies only to the sheet on which it is placed.
Note: The process for creating headers and footers is very slow (approx. 2 sec per header/footer on a Pentium III, 450 MHz). This is an irritating feature of Excel which numerous people have already complained about. For this reason, sparing use should be made of headers and footers.

The **Example Header/Footer** menu generates a sample entry with all the possible options:

[Header/Footer: &D=Current Date, &T=Current Time, &F=File Name (without path), &A=Sheet Name, &P=Page No., &N=Number of Pages, &"Arial"=Font Arial, &16=Font Size 16, &B=Bold, &I =Italic, &U=Underlined]

These options can be applied in all languages.
Menu: **Add Sheets/Macros**
When you create a new file (Definition or Template), three diagrams and one picture are created as examples at the same time. If more diagrams or pictures are needed, select:
Miscellaneous | Add Sheets/Macros. The following dialog box is displayed:

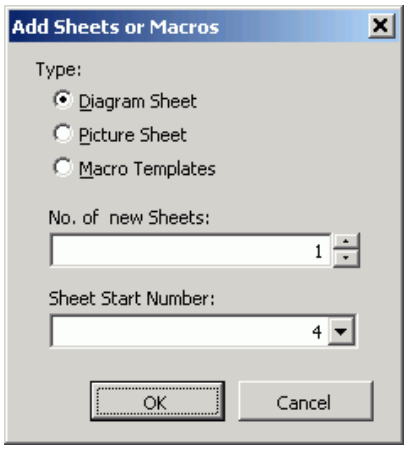
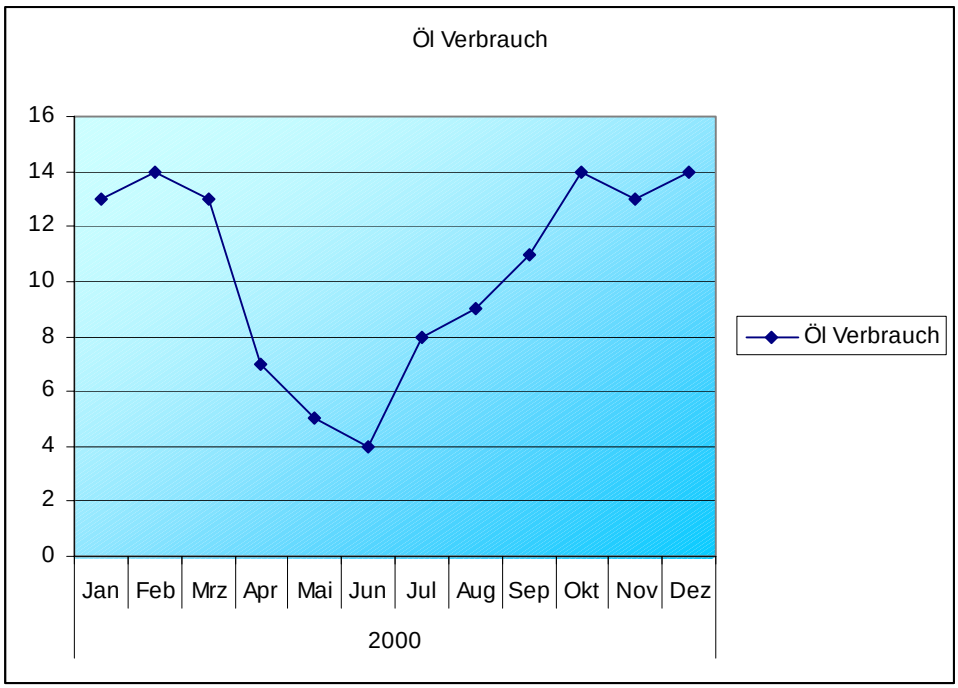


Diagram sheets, picture sheets or macro templates can be added. If you select **Diagram Sheet,** the following sample diagram is generated:



The **Sheet Starting Number** for the sheet is defined automatically (the first free Diagram sheet number). The starting number can also be modified manually. **Number of New Sheets** determines how many new sheets are to be created. If you enter a number greater than 100, you can still only create a maximum of 100 new sheets. The maximum **Sheet Starting Number** is 32,000. If a higher value is entered, it will be reset to 32,000.
Note: A maximum of approximately 800 sheets can be created per workbook (a limitation of Excel).

When picture sheets are selected, the following sample picture is generated:

The starting number and number of sheets are defined as with the diagram sheets.

Templates macro

If you select **Templates macro**, the Add-In generates the following macro frames:

For definition files:

```
Sub ShowMacro()
   Enter <program code> here
End Sub
Sub SaveMacro()
   Enter <program code> here
End Sub
Sub PrintMacro()
   Enter <program code> here
End Sub
```

For templates

```
Sub PrimaryShowMacro()
   Enter <program code> here
End Sub
Sub PrimarySaveMacro()
   Enter <program code> here
End Sub
```

```
Sub PrimaryPrintMacro()
   Enter <program code> here
End Sub
```

REX offers a wide range of options but, inevitably, customers often want the very option that is not covered by REX. In such cases, macros can be used to extend the functional scope of REX.

Macro commands can now be entered in place of the comment. These are run before the report is displayed/saved/printed (starting with the Primary… Macro, followed by the other macro). When the macros have been run, they are removed from the report. (This prevents the nuisance display of a virus warning each time the file is opened). Afterwards the report is saved as usual.

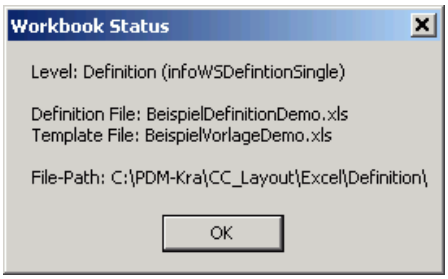
The macros are run in the following order:
Display:
- PrimaryShowMacro
- ShowMacro

Save:
- PrimarySaveMacro
- SaveMacro

Print
- PrimaryPrintMacro
- PrintMacro

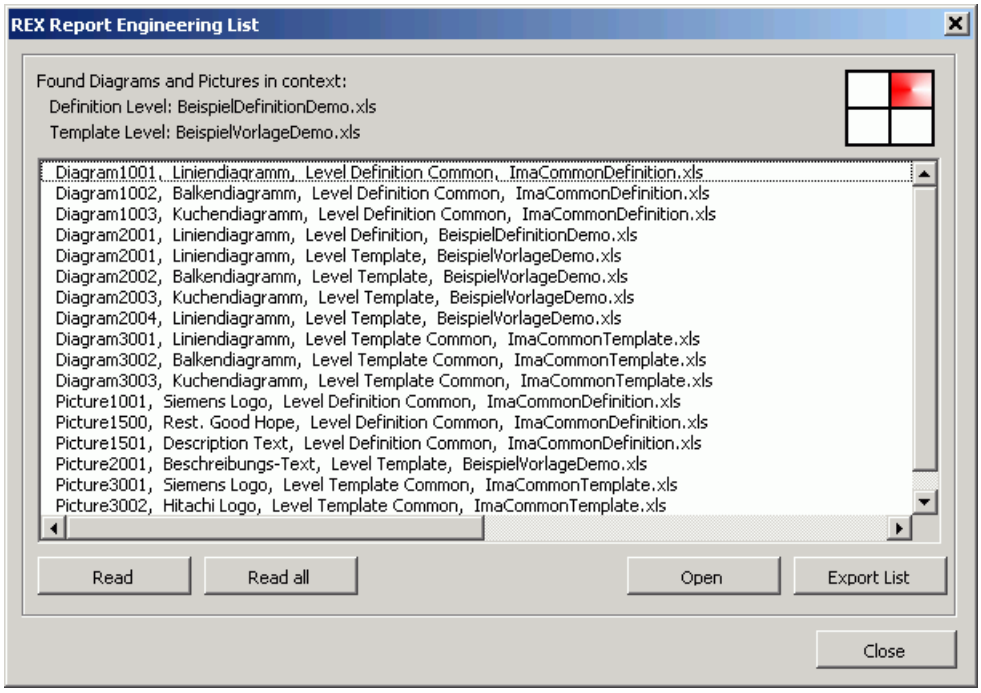
If it is desirable to preserve some macros (i.e. to retain them in the completed report), these macros must be put into a module named ImaDefinition (or ImaTemplate).

Workbook status menu
This menu option shows the status of the active workbook. The following dialog box appears (example):



Overview list menu:

This list provides an overview of all the available diagram sheets and picture sheets. Example:


REX Report Engineering List
Found Diagrams and Pictures in context:
Definition Level: BeispielDefinitionDemo.xls
Template Level: BeispielVorlageDemo.xls
Diagram1001, Liniendiagramm, Level Definition Common, ImaCommonDefinition.xls
Diagram1002, Balkendiagramm, Level Definition Common, ImaCommonDefinition.xls
Diagram1003, Kuchendiagramm, Level Definition Common, ImaCommonDefinition.xls
Diagram2001, Liniendiagramm, Level Definition, BeispielDefinitionDemo.xls
Diagram2001, Liniendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2002, Balkendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2003, Kuchendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram2004, Liniendiagramm, Level Template, BeispielVorlageDemo.xls
Diagram3001, Liniendiagramm, Level Template Common, ImaCommonTemplate.xls
Diagram3002, Balkendiagramm, Level Template Common, ImaCommonTemplate.xls
Diagram3003, Kuchendiagramm, Level Template Common, ImaCommonTemplate.xls
Picture1001, Siemens Logo, Level Definition Common, ImaCommonDefinition.xls
Picture1500, Rest. Good Hope, Level Definition Common, ImaCommonDefinition.xls
Picture1501, Description Text, Level Definition Common, ImaCommonDefinition.xls
Picture2001, Beschreibungs-Text, Level Template, BeispielVorlageDemo.xls
Picture3001, Siemens Logo, Level Template Common, ImaCommonTemplate.xls
Picture3002, Hitachi Logo, Level Template Common, ImaCommonTemplate.xls
Read
Read all
Open
Export List
Close

The "report cube" graphic, top right, indicates the type of file loaded (definition or template).

If the cursor is positioned on a diagram or picture element when the overview list is launched, this entry is selected.

The dialog box displays all the diagrams and pictures found. The following rule is applied in this process:
The settings have no effect on this list. Whether or not **…comprehensive list** is selected, the following diagrams and pictures are displayed.

1. If there is NO definition/template file loaded, the following files are displayed: the CommonDefinition file, All templates and CommonTemplate.
   (In practice, a search should be run on all definition/template files. However, as this can take a very long time, the definition files are not searched. If a complete list of all diagrams/pictures is required, the **Load all** button must be pressed.
2. If a template is loaded, only the template diagrams and pictures, and the diagrams from CommonTemplate are displayed.
3. If a Definition which is linked to a template is loaded, diagrams and pictures from the following files are displayed: the loaded file, the CommonDefinition file, the linked template and CommonTemplate.
4. If a Definition which is NOT linked to a template is loaded, diagrams and pictures from the following files are displayed: the loaded file, the CommonDefinition file, All templates and CommonTemplate.

The text at the top of the dialog box reads: *Context of the diagrams and pictures found:*
The next two lines show the basis of the selected diagrams and pictures.

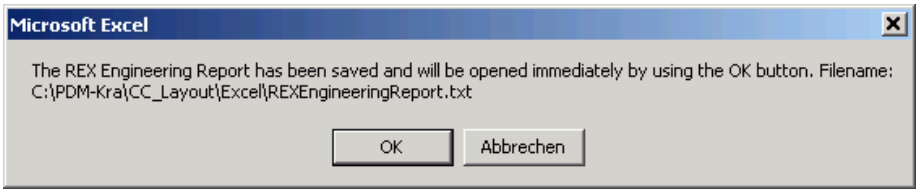
If the overview list was opened without a previously loaded definition/template file, the introductory text reads only:
Diagrams and pictures found:

Use of the **Load** button causes the list to be re-loaded. (The list is not automatically reloaded each time the overview list is re-opened. It is loaded on the first occasion, and whenever a definition/template file is replaced or reloaded.)

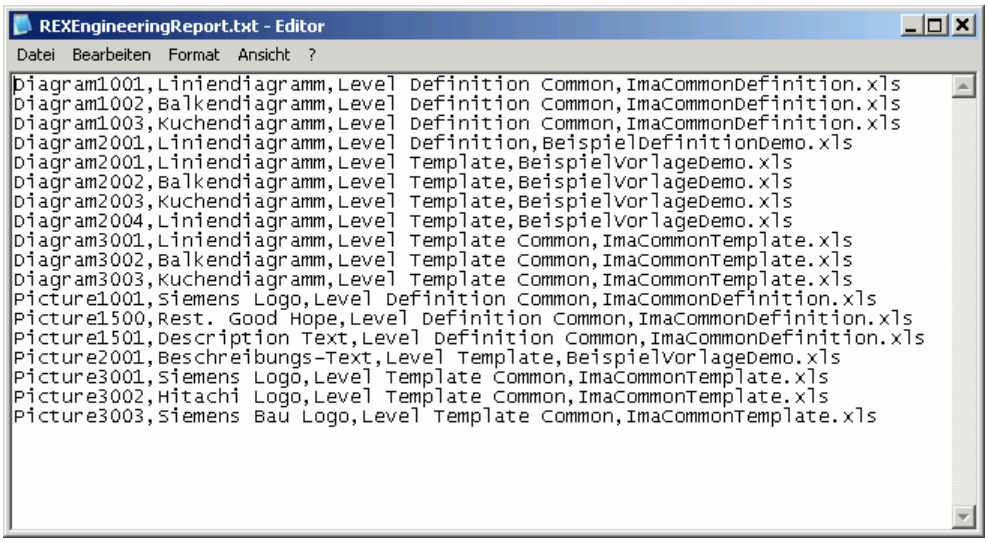
The **Read all** button generates a list of all definition and template files, regardless of the level of the loaded workbook. If there is a large number of definitions/templates on the computer, it can take a long time to generate this list.

The **Open** button is used to open one of the listed files. Select the required entry and click **Open**. Alternatively, the file can be opened by double-clicking.

The **Export list** button is particularly suitable for users who like working with printed lists. Clicking this button initially produces the following message:


Microsoft Excel
The REX Engineering Report has been saved and will be opened immediately by using the OK button. Filename:
C:\PDM-Kra\CC_Layout\Excel\REXEngineeringReport.txt
OK
Abbrechen

Click **OK** to acknowledge the information and display the following list:

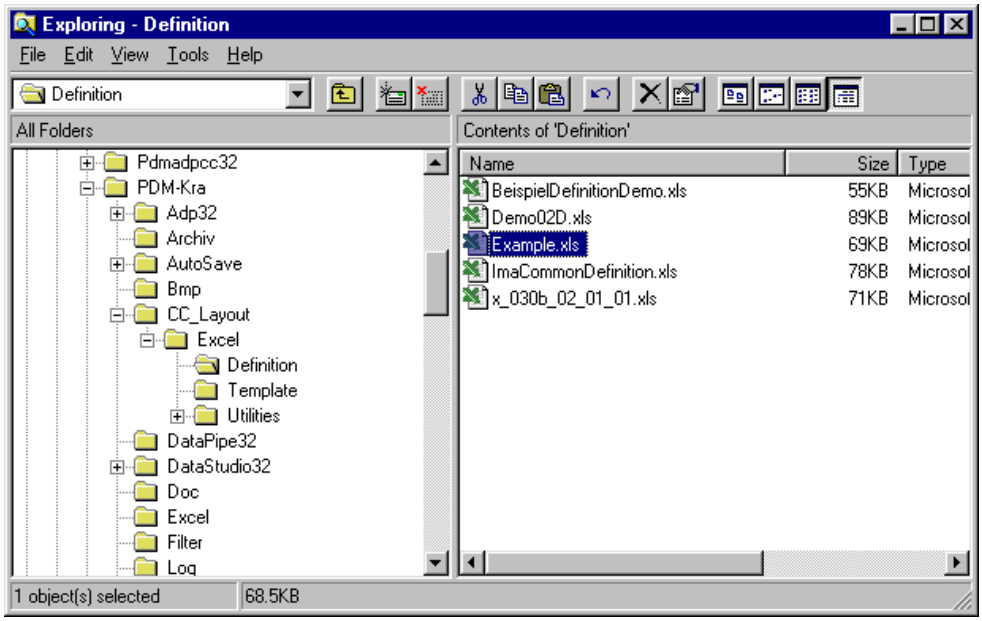


The list is saved as a Notepad file and can be used in this form.

Open Definition/Template menu

The definition and template files are in the PDM-ADP directory. Example:
C:\PDM-ADP\CC_Layout\Excel\Definition\Example.xls

To make life a little easier for the user, this menu allows them to open a Microsoft Explorer pointing directly to the open file. Example:

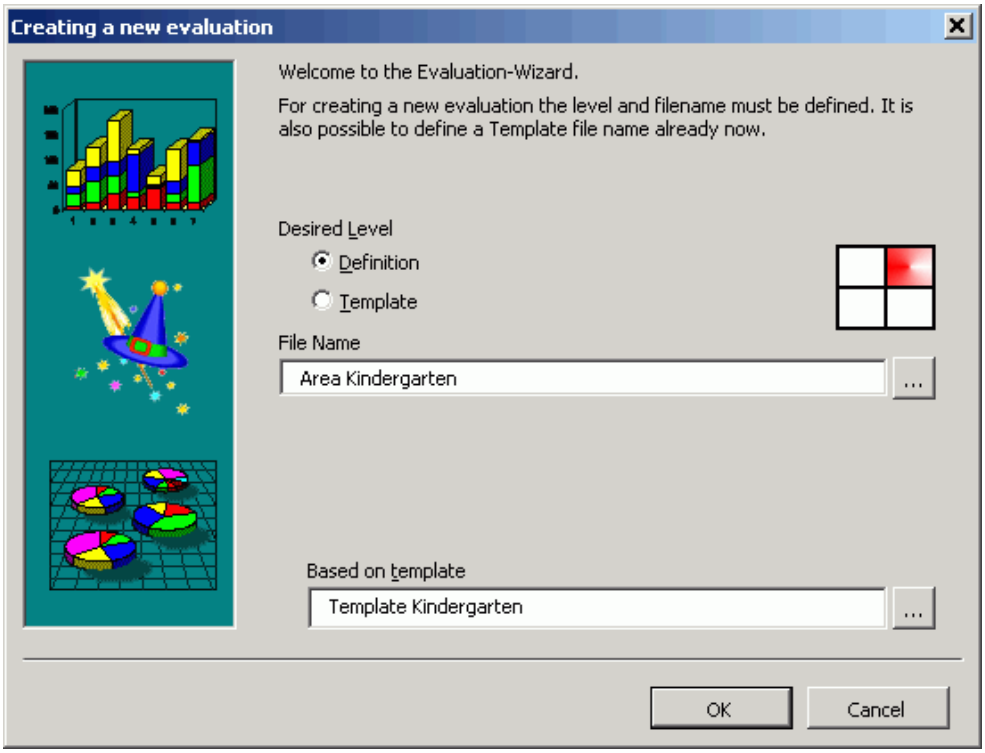


4.2.2 The Engineering command bar

This bar also has an **About** button . See the section **About/Help** for a description. This log-off button is also described there.

4.2.2.1 Creating a new Definition/Template file

When you click the icon, the following dialog box opens:



Start by selecting whether you want to create a definition or a template. On the basis of this setting, the schematic "report cube" may change, to reflect the type of file to be created (definition or template).

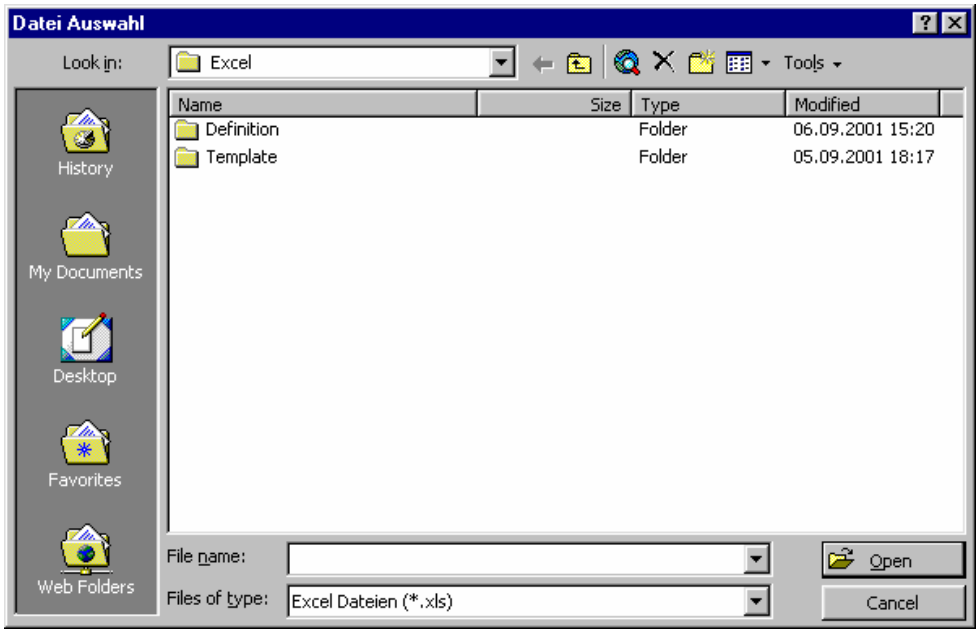
The file name describes the name of the definition/template. Click to browse for an existing file. In this case, you will be asked later, whether you want to overwrite this file.

The field **Based on template** is only active if you are creating a definition. If you are creating a template, this field is grayed.
The browse button [**...**] allows you to select an existing template for this definition. This template is then used for inheritance purposes.

Click **OK** to generate the definition/template in Excel and save it as a file.

4.2.2.2 Opening a definition/template

To open an existing definition/template, click the following icon . A standard file selection dialog box opens:



The path is automatically set to the Excel directory in PDM-ADP/CC_Layout so you only need to select either the Definition folder or the Template folder.
The **File name** field operates as a filter. Enter in this field the name of a file not visible in the main field above, and click **Open**. The main field will simply appear empty…

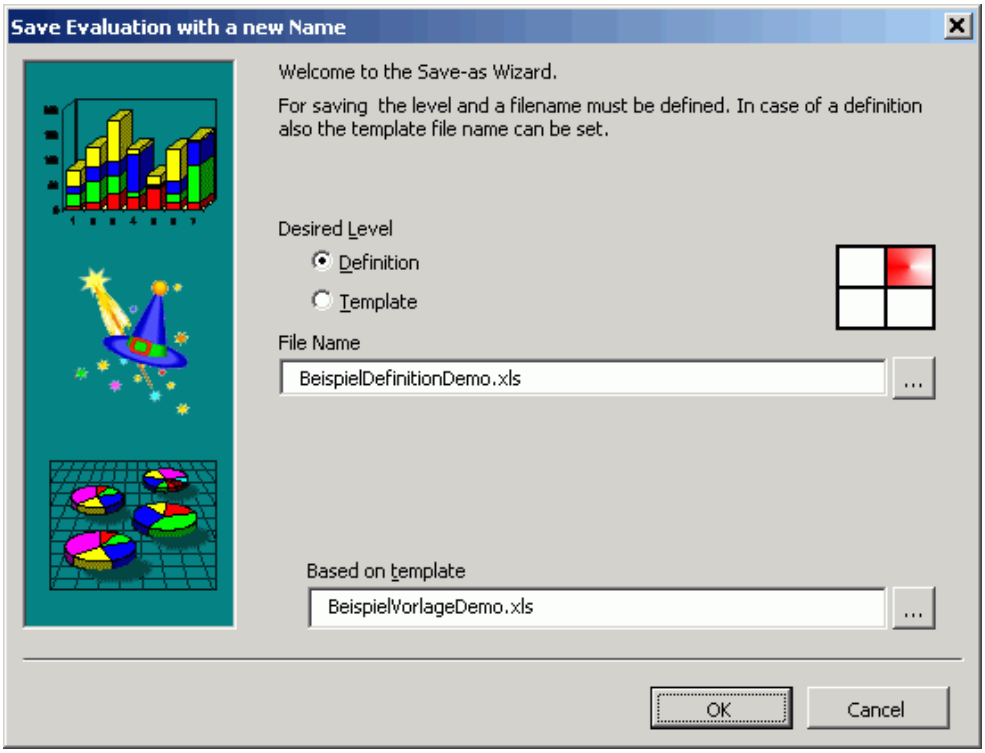
If a file is loaded from a folder other than *Definition* or *Template*, an error message is displayed. An error message is displayed even if the loaded file is not a valid definition/template file.
If the file is already loaded, this is also indicated by an error message. Note: Identical file names cannot be loaded twice, even if they are resident in different directories. Example: The file `John.xls` is loaded from the *Definition* folder. It is then not possible to load a second file named `John.xls` from the *Template* folder (a limitation of Excel).

4.2.2.3 Saving a definition/template

A definition/template can be saved by clicking . As with the normal Excel **Save** function the file is saved immediately without prompting for a file name. The button can be used only if a valid DESIGO definition/template is loaded.

4.2.2.4 Saving a definition/template with Save As…

A definition/template can be saved under a new name by clicking (**Save Definition/Template As…**)
Click to display the following dialog box:



The dialog box is almost the same as for a **New Definition/Template** ( ) and contains exactly the same fields. Refer to this option for a description of the fields.

Click **OK** to save the definition/template as a file.

4.2.2.5 Starting a test run

Click the button to start a test run. In this test run, random values are used instead of the values from the database. This makes it possible to test a report before all the data series are available in the data base and before there is any data in the database. However, the Add-In does not have quite enough information for the test run. We therefore need to make a few additions to the report sheets.

- Date column: The characters ## are required, to declare a column as a "Date column".
- Column length: The length of the column is defined by $$.

Example:

[Values, All V	[Values, All V	[Values, All Values(3)]
[-"-]	[-"-]	[-"-]
[-"-]	[-"-]	[-"-]
[-"-]	[-"-]	[-"-]
##		
$$	$$	$$

Result, after clicking :

01.01.2000	57	57
02.01.2000	47	78
03.01.2000	74	38
04.01.2000	39	54
05.01.2000	70	42
06.01.2000	73	30
07.01.2000	40	25
01.01.2000	57	57
02.01.2000	47	78
03.01.2000	74	38
04.01.2000	39	54
05.01.2000	70	42
06.01.2000	73	30
07.01.2000	40	25

The result shows how the number of values is limited to 7 by the $$ flags. The flag ## has produced a date in the first column. By default this starts at 1.1.2000, and is incremented by one day at a time. If different start dates and increments are required, these can be defined as follows:

- ## = Start 1.1.2000, resolution of 1 day
- ##36922 = Start: 15.1.2001, date resolution (To create this number: Enter the date in Excel and set the cell format to Number.)
- ##36922s = Start: 15.1.2001, resolution to 1 second
- ##36922s10 = Start: 15.1.2001, resolution of 10 seconds
- ##m = Start: 1.1.2000, resolution of 1 minute

Other options: h = resolution of 1 hour, t = resolution of 1 day, w = resolution of one week,, M = M = resolution of 1 month, q = resolution of 1 quarter, y = resolution of 1 year.

The ## flags can be placed anywhere in the relevant column.
In the absence of $$ flags, 30 values are entered.

The random generator does not have any information for text elements such as the name of the database, for example. In such cases, therefore, the element text is used, without the square brackets. Example:

[Database User]
[Dataseries, Name(4)]
[Node, Name]

Result:

Database User
Dataseries, Name(4)
Node, Name

Diagrams and pictures are inserted correctly, as with a normal run. (Of course, the diagrams use the randomly generated numbers and the element text but without square brackets.)

The test run is always started with the file to be tested as the active workbook. This workbook is reloaded after the test run. This allows users to switch back and forth between the definition/template and the final report.

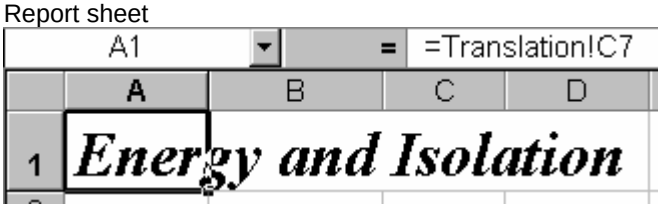
Important: To prevent the test run from encountering problems with other previously loaded definitions and templates, these are all closed before starting the test (and are not opened again subsequently).

4.2.2.6 Translating a template

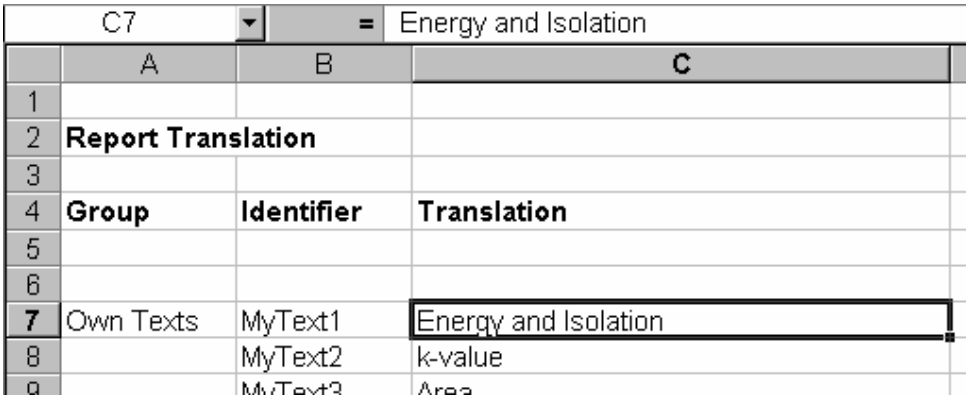
Click the button (**Translate template**) to start the translation of the template. (Definitions cannot be translated. They are created in the Regional Companies and are therefore already in the required language.

Background: All text in the templates must be linked to the "Translation" sheet. In other words, the text must appear in the Translation sheet; the report itself contains only a link to the cell in the translation sheet. Example:

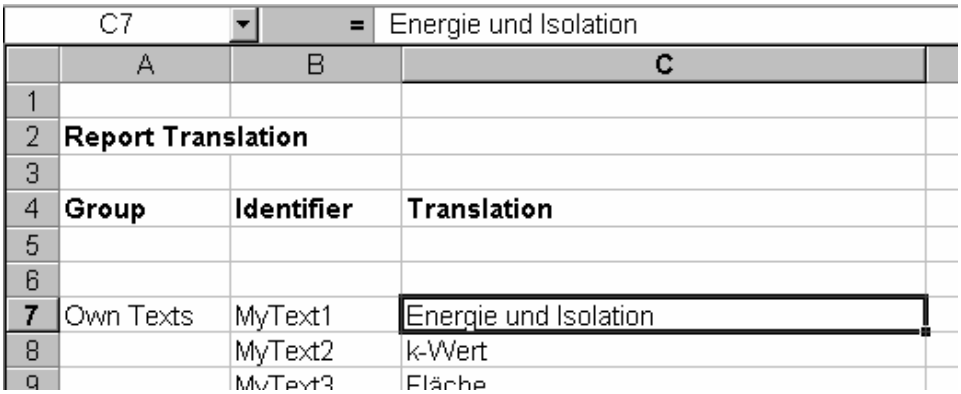
Report sheet



Translation sheet



At runtime, the translated text is imported from the file `REX_Translation.xls`. When the final report is created, it looks like this:



This text can only be "rectified" at runtime if the text has already been translated (translation is required once only). This is done by clicking . The following sheet is displayed:

	A	B	C	D	
2					
3	Sequence: A: Identifier, B: German, C: English, D: Danish, E: Dutch, F: French, G: Italian, H: Norwegian, I: Slowakian, J: S				
4					
5	**Identifier**	**GER**	**ENG**	**DAN**	**DUT**
6					
7	MyText1		Energy and Isolation		
8	MyText2		k-value		
9	MyText3		Area		
10	MyText4		J per l oil		
11	MyText5		Oil use bw.		
12	MyText6		Date		
13	MyText7		Indoor Temp.		
14	MyText8		Outdoor Temp.		
15	MyText9		Oil Use Calculated		
16	MyText10		Oil Use Real		
17	MyText11		Calc		
18	MyText12		Real		

Situation: Language: English. The template contains the English text in the Translation sheet.

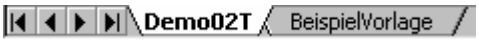
Any text that does not yet exist under "English" in the file `ImaTranslation.xls` is copied by the Add-In into the ENG column and displayed in red. The Regional Company now translates the text, e.g. into German, and writes the translations in the GER column. The font of the original text is changed to blue, and the file is stored with .

	A	B	C	D
2				
3	Sequence: A: Identifier, B: German, C: English, D: Danish, E: Dutch, F: French, G: Italian, H: N			
4				
5	**Identifier**	**GER**	**ENG**	**DAN**
6				
7	MyText1	Energie und Isolation	Energy and Isolation	
8	MyText2	k-Wert	k-value	
9	MyText3	Fläche	Area	
10	MyText4	J per l Öl	J per l oil	
11	MyText5	Ölverbr. zw.	Oil use bw.	
12	MyText6	Datum	Date	
13	MyText7	Innen-Temperatur	Indoor Temp.	
14	MyText8	Aussen-Temperatur	Outdoor Temp.	
15	MyText9	Ölverbr. Berechnet	Oil Use Calculated	
16	MyText10	Ölverbr. Echt	Oil Use Real	
17	MyText11	Ber.	Calc	
18	MyText12	Echt	Real	

From this point on, the text in the final report will be displayed in German if the language is set to German. If other English text is added to the template (e.g. if Siemens improves the template) then only the new text items will be added to the ENG column in red. This lets the translator in the RC see immediately which text needs translating.
Important: Existing text in the template (delivered previously) must NOT be changed. If a change is required, a new text must be created, and the link must be changed so that it points to this text. (The old text then has no effect, although it remains in the file.)
Background: The file REX_Translation.xls is created automatically when the text is translated for the first time. The file REX_Translation.xls is NOT included in the setup. This prevents the translations from being lost in the event of an upgrade.

The file REX_Translation.xls includes a tab (workbook sheet) for every template. If more templates are added, the necessary number of tabs is added automatically. Excel

only allows a maximum of 800 sheets, and therefore the maximum number of templates is 800.



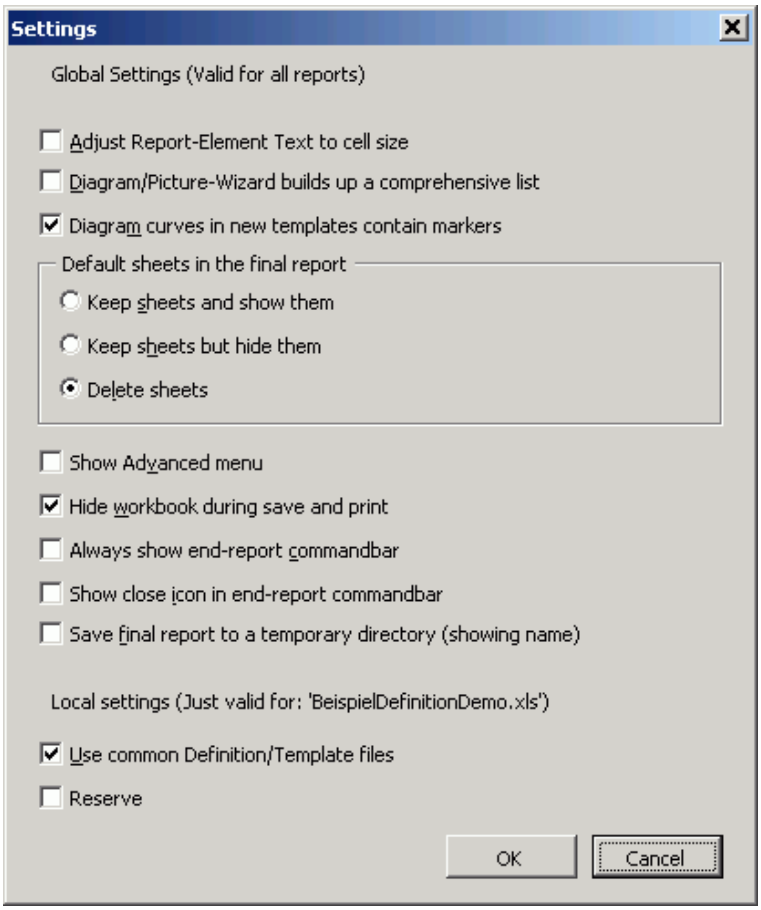
4.2.2.7 Translating all templates

Click the button (**Translate All Templates)** to start the translation of all the templates in the current database. The translation process is as described in the section headed "Translating a template".

After translating and saving a template, click again. This automatically loads the next template and starts the translation. If all templates have been translated, a message is displayed to this effect.

4.2.2.8 Settings

Click (**Settings**) to open the dialog box for global and definition/template-specific settings. The dialog box looks like this:


Settings
Global Settings (Valid for all reports)
Adjust Report-Element Text to cell size
Diagram/Picture-Wizard builds up a comprehensive list
Diagram curves in new templates contain markers
Default sheets in the final report
Keep sheets and show them
Keep sheets but hide them
Delete sheets
Show Advanced menu
Hide workbook during save and print
Always show end-report commandbar
Show close icon in end-report commandbar
Save final report to a temporary directory (showing name)
Local settings (Just valid for: 'BeispielDefinitionDemo.xls')
Use common Definition/Template files
Reserve
OK
Cancel

The settings are divided into global and local settings. Local settings can only be modified if a definition/template is loaded.

The following settings can be modified:

Adjust report element text to cell size

Normally, report element text uses Font Size 11. There is therefore not enough room for long report-element text entries in a cell. If this check box is selected, the text is adjusted so that it small enough to fit in the space.
Example:

With check box cleared ("Off"):

[Datenbank Name]		
[Aktion (Zahl)]		
[Diagram2	[Diagram	[Diagram2059]
[Diagram2059]		[Diagram2059]
[Diagram2059]		[Diagram2059]
[Diagram2059]		[Diagram2059]
[Diagram2	[Diagram	[Diagram2059]

With check box selected:

[Datenbank Name]			
[Aktion (Zahl)]			
[Diagram2059]	[Diagram2059]	[Diagram2059]	
[Diagram2059]		[Diagram2059]	
[Diagram2059]		[Diagram2059]	
[Diagram2059]		[Diagram2059]	
[Diagram2059]	[Diagram2059]	[Diagram2059]	

=>> Default: Check box cleared ("Off")

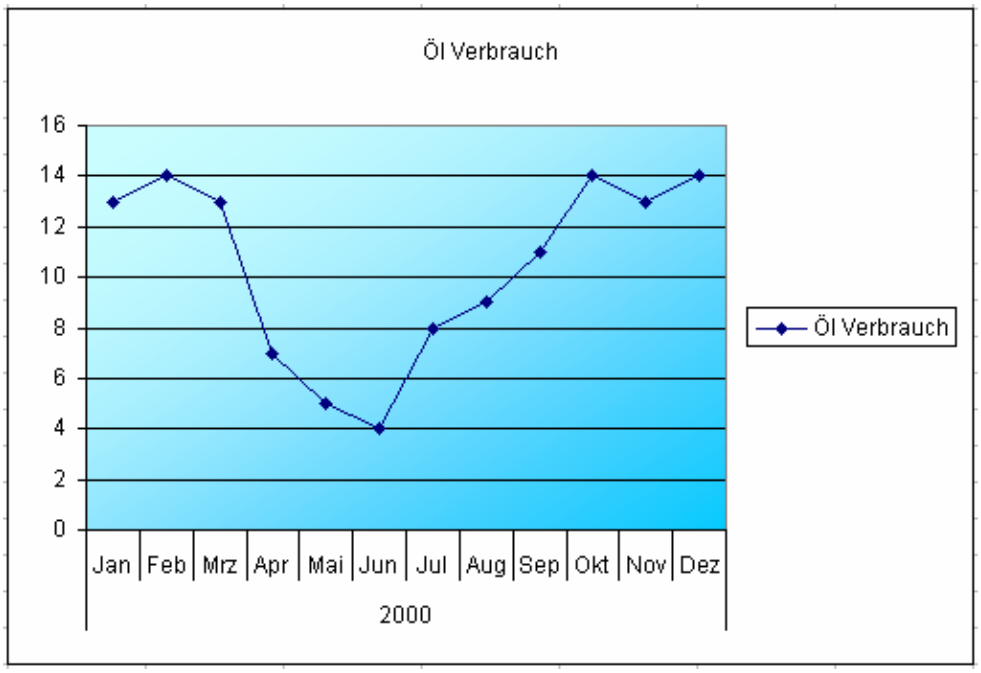
Diagram/Picture wizard builds up comprehensive list when opened

The effects of this option were described earlier in conjunction with the chart and picture wizards. If the check box is not selected ("Off"), the chart and picture wizards only show diagrams and pictures from their own file.

=>> Default: Check box selected ("On")

Diagram curves in new templates contain markers

If the button is used to start a new definition/template, a sample line chart is drawn in the Diagram1 sheet. If the check box is selected ("On"), the chart looks like this:



If the check box is cleared the chart type without rectangular markers is selected.

=>> Default: Check box selected ("On")

Default sheets in the final report

This group of options is used to control the contents of the final report.

- **Keep sheets in and show them***:* The following sheets are then displayed:
  Charts
  Pictures
  Translation
  RawData sheet
  (The sheet REXPrivate is always hidden)
  =>> Default: Check box cleared ("Off")

- **Keep sheets but hide them:** The following sheets are hidden:
  Charts
  Pictures
  Translation
  RawData sheet
  REXPrivate
  =>> Default: Check box cleared ("Off")

- **Delete sheets:** The following sheets are then deleted:
  Charts
  Pictures
  RawData sheet
  (Translation is hidden only)
  (REXPrivate is hidden only)
  =>> Default: Check box selected ("On")

The option of retaining standard sheets rather than deleting them is especially useful when generating reports.

Show Advanced Menu

Selecting this option enables **Advanced** menu. The associated menu options are described further below.

=>> Default: Off

Hide workbook during save and print

If this check box is enabled, the Excel window is displayed while reports are generated and sent for saving and printing. This allows users to work without interruption while reports are sent to the printer or disk under the control of the scheduler.

Enabling this option helps for example in cases where troubleshooting is necessary.

=>> Default: On

Always show the end-report commandbar

The command bar for the final report is normally only displayed for reports initiated within CC.

=>> Default: Off

Show close icon in end-report commandbar

The **Close Report** button closes a final report without asking whether the report is to be saved.
Background: Right at the end of the Add-In run, Excel sets the final report to "Modified". This is useless if the user resets the "Modified" flag in the Add-In (flaw in Excel).

Note: If you modify the final report and then click the **Close** icon, the report closes without a confirmation prompt. Any changes are then discarded.

=>> Default: Off

Save final report to a temporary directory (showing name)

If this option is enabled, all the completed reports are assigned a name. This makes them easier to identify by name when viewing them via the Excel **Window** menu. (This does not work in the test run – only with a genuine retrieval, e.g. from CC.)

=>> Default: Off

Local settings

Use CommonDefinition/Template files.

This allows you to determine, for each definition/template, whether the file ImaCommonDefinition or ImaCommonTemplate is to be used.

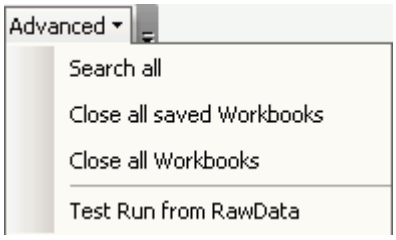
=>> Default: Off

Spare

This option will either be replaced or removed in the Release version.

4.2.2.9 The Advanced menu

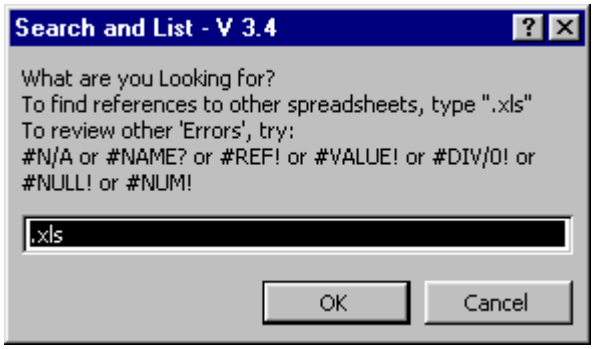
The **Advanced** menu can be activated under **Settings**. It contains the following entries:



Search all

Excel is rather poorly equipped in terms of the Search feature. So, for example, it is not possible to search all sheets at once for a term. This small utility written by Gary L. Brown simplifies work with Excel.

When you select the menu option, the following dialog box is displayed:


Search and List - V 3.4
What are you Looking for?
To find references to other spreadsheets, type ".xls"
To review other 'Errors', try:
#N/A or #NAME? or #REF! or #VALUE! or #DIV/0! or
#NULL! or #NUM!
.xls
OK
Cancel

If you enter "picture", for example, the result is as follows:

	A	B	C	D	E	F	G
1	**12 hit(s) on Search Criteria: picture**						
2	Worksheet	Address	Col	Row	Type	Results Found	Value
3	Calculation1	D20	D	20	F	=2*picture	#Name?
4	ImaPicture1501_1_3				R	=Report!$B$3:$E$3	=Report!$B$3:$E$3
5	ImaPicture3001_2_3				R	=Report!$K$1:$L$1	=Report!$K$1:$L$1
6	Picture3002				W		Note: WORKSHEET
7	Picture3002	Picture			O	Picture 2	
8	Report	K1	K	1	V	[Picture3001]	[Picture3001]
9	Report	L1	L	1	V	[Picture3001]	[Picture3001]
10	Report	B3	B	3	V	[Picture1501]	[Picture1501]
11	Report	C3	C	3	V	[Picture1501]	[Picture1501]
12	Report	D3	D	3	V	[Picture1501]	[Picture1501]
13	Report	E3	E	3	V	[Picture1501]	[Picture1501]
14	Report	Picture			O	Picture 1	

The items displayed are Formulae (F), Ranges (R), Worksheets (W), Objects (O), Values/Text (V).

Close all saved Workbooks

This command lets you close all workbooks that have not been modified after opening. This is a quick and safe way of "tidying up" Excel.

Close all Workbooks

This command closes all workbooks, whether or not they have been modified. This is a quick way of "tidying up" Excel.
Caution:: This command must be used with care. Unless they have already been saved, any changes will be lost irretrievably.

Test Run from RawData

The test run described above operates with random values. This enables you to run a full test report without CC.
However, if CC has already been set up and is supplying raw data, you can run a test with real data. To do this, start a REX report in CC. From the final report, copy the RawData sheet into the REX definition. The report can now be tested without the need to start a report in CC each time. Instead, simply go to the **Advanced** menu and select: **Test run from RawData**.

4.2.3 The Reporting command bar

This bar also has an **About** button . See the section **About/Help** for a description.

The **Reporting** command bar appears when you launch a report in CC in "Display" mode. This toolbar can be used without logging in from within Excel.
It is also possible to display the **Reporting** command bar permanently. This option can be enabled under **Settings**.

4.2.3.1 Opening a report

The **Open Report** button is a simple way of opening a previously saved final report. The final reports are saved in the following directory: C:\PDM-ADP\AutoSave (or in another directory, if this has been changed in CC.INI).
The **Open** button then takes the user automatically to the right directory.

4.2.3.2 Saving a report

The button automatically saves a just-completed final report in the right directory path. It also assigns the report the file name defined in CC.

4.2.3.3 Printing a report

The button is used to print a final report automatically on the printer defined in CC.
Note: If an invalid printer is specified, REX uses the standard printer. No error message is transmitted. (Excel shortcoming)

4.2.3.4 Displaying a print preview

Click to display a print preview of a final report for the printer defined in CC.

4.2.3.5 Closing a report

Click to close a report without the irritation of being asked if you want to save the changes.
Background: Right at the end of the Add-In run, Excel sets the final report to "Modified". This is pointless if the user resets the "Modified" flag in the Add-In. (flaw in the Excel tool)

This toolbar button only appears if enabled under **Settings**.

4.3 Sheets and tabs

When you use to create a definition/template, the folder created contains a whole range of sheets. These are:

- Report
- Calculation1
- **Diagram**1
- **Diagram**2
- **Diagram**3
- **Picture**1
- **Translation**
- **REXPrivate**
- **RawData1**

The sheet names printed in bold must NOT be changed.
Similarly, these names shown in bold must not be used for any independently created sheet (not even as just part of a sheet name). So, for example, the name "MyFavoriteDiagram" is not permitted. "Misuse" of these names can produce idiosyncratic errors or even cause the macro to crash.

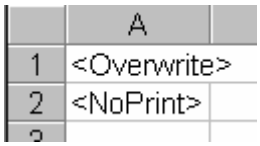
The content of the predefined sheets is described in the subsections below.

4.3.1 Report

After generation of the Definition/Template, this sheet is blank. The intention is that users will insert their reports in this sheet. The name of this sheet can be changed.

4.3.2 Calculation1

After generation of the Definition/Template, this sheet is more or less empty. The intention is that users will insert their calculations in this sheet. The name of this sheet can be changed.
The sheet contains two flags:



The <Overwrite> flag (not case-sensitive) will cause this sheet to be overwritten by the next higher level. A sheet at the "Definition" level is overwritten by a sheet of the same name at the "Template" level.
To overwrite a sheet with the sheet of the same name in ImaCommonDefinition (or ImaCommonTemplate), the flag <Overwrite**C**> must be used.
If a sheet required by Overwrite/OverwriteC is not found, an error message is displayed.

The <NoPrint> flag (not case-sensitive) prevents this sheet from being printed. (This only works in conjunction with the button in the **Reporting** command bar.)

Important: The flags must be written inside angular brackets. On its own, *Overwrite* has no effect. The<Overwrite(C)> flag must always be located in cell A1. The<NoPrint> flag must always be located in cell A2.

Other notes on the flags: <Overwrite> and <NoPrint> can be used in all the sheets. However, they do not work everywhere…
Overwrite:

- RawData sheets are never overwritten.
- The REXPrivate sheet is never overwritten.
- The Definition Translation sheet is overwritten in accordance with whatever has been defined in the Template Translation sheet. No <Overwrite> flag is required here. Caution: If an <OverwriteC> flag is entered on the Translation sheet, the translation sheet will be overwritten by the sheet in ImaCommonTemplate, which does not make good sense.

In other words: Never write <Overwrite(C)> in the sheets: RawData1, Translation and REXPrivate.

NoPrint:
The following sheets are never printed:

- Diagram, e.g. Diagram1, Diagram1001
- Picture, e.g. Picture1, Picture1001
- Translation
- **REXPrivate**

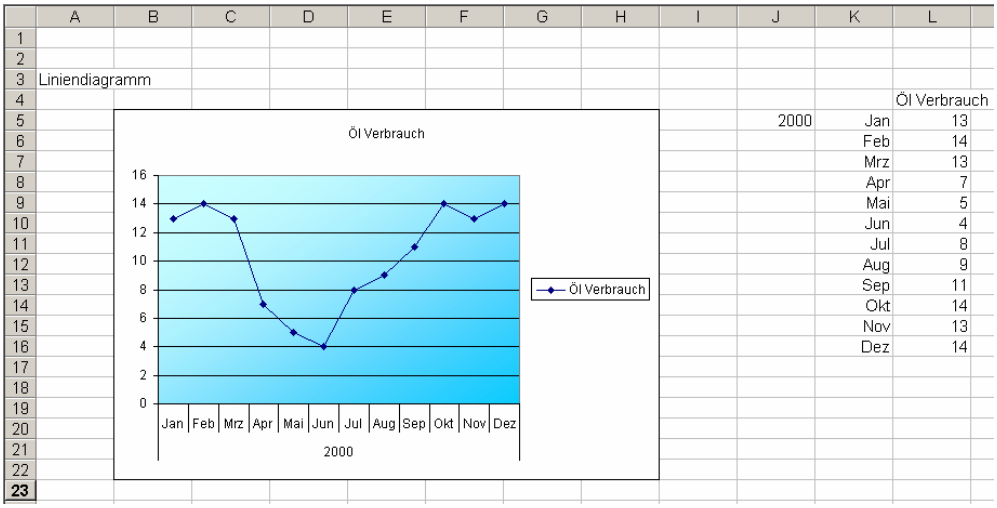
4.3.2.1 Adding information to the <Overwrite> flag

As stated earlier, the <Overwrite(C)> flag causes an existing sheet to be overwritten. In this context, the following special case must be noted:

Using report elements in overwritten sheets:
If a diagram makes use of cells (data series) from other sheets, and these sheets are overwritten, then the elements concerned will disappear from the diagrams.
Example: Diagram 1 is located in the Report sheet of the definition file. The diagram uses a series from the sheet Calculation1 in the definition file. The sheet Calculation1 of the definition file contains an <Overwrite> flag. This causes the Calculation1 sheet to be overwritten at runtime with the Calculation1 sheet from the Template. It also means the disappearance of the invisible markers created in Calculation1 when creating Diagram1. The result is that the curve concerned will not appear in the diagram.
To prevent this, the Add-In copies all the markers associated with the components of the diagram (curves, titles, legends etc.) from the destroyed sheet to the new sheet. The actual diagram elements themselves are not copied from the destroyed sheet to the new one. Neither are any other report elements copied from the destroyed sheet to the new one.

4.3.3 Diagram1

The sheet "Diagram1" contains a sample diagram. These diagrams are used by the Chart Wizard. The following shows the contents of "Diagram1":



The diagram template sheet must be set up as follows:

- Cell A3: Descriptive text for this diagram: This is the text that then appears in the Chart Wizard.
- Template diagram: The diagram can be positioned anywhere on the sheet. However, each sheet may contain only one diagram.
- A date series and a date series with a key (here: Oil consumption). The second rate series (2000) is not required, and was used only to illustrate multi-level X-axes.

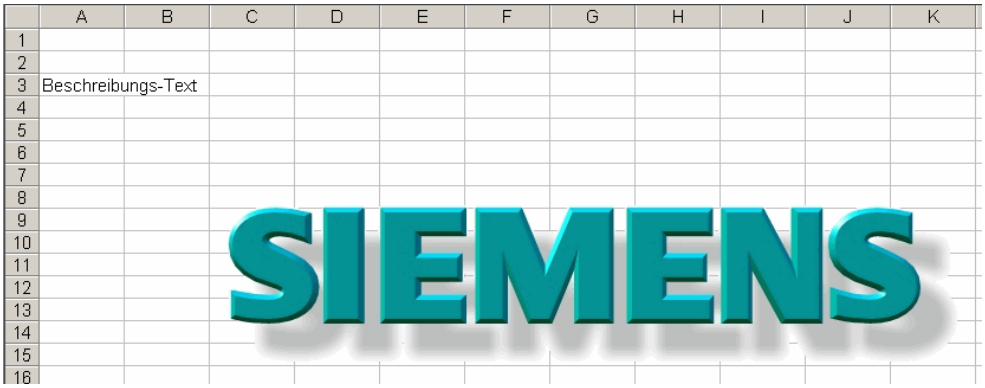
Right-click on the diagram to set the diagram parameters, e.g. diagram type, diagram options, diagram area and formatting. All these settings are used when generating the final report. Only the data is then adopted by the report elements, as defined in the diagram wizard.

Note: Many diagram types (e.g. bubbles) need more than one data series. In such cases the diagram template sheet must contain several data series. The template diagram must contain a curve (or bubbles, or whatever is appropriate in each case) otherwise the Add-In cannot use this diagram.

The "Diagram2" sheet contains a sample bar chart, and "Diagram3" contains a pie chart.

4.3.4 Picture1

The Picture1 sheet contains a sample picture. These pictures are used by the Picture Wizard. The following shows the contents of "Picture1":



The picture-template sheet must be set up as follows:

- Cell A3: Descriptive text for this picture: This is the text that then appears in the Picture Wizard.
- Template picture: The picture can be positioned anywhere on the sheet. However, each sheet may contain only one picture.

Supported picture types:
Not all types of picture are supported without problems. The following have been tested so far:

- GIF
- JPG

WordArt pictures can be problematic. Instead of copying these pictures directly into Excel, first cut them with a screen capture program (e.g. HyperSnap from http://www.hyperionics.com) and then save them as .GIF. Use the same method for other potentially problematic picture formats.

4.3.5 Translation

The Translation sheet has already been described under "Translating a template". Please refer to this section.

4.3.6 REXPrivate

This sheet is normally hidden. It contains information on the control of the Add-In.

4.3.7 RawData1

The sheet "RawData1" contains the raw data. The layout of these sheets is not relevant to the user, as users do not have direct access to the RawData sheets. The RawData sheets are normally deleted when the creation of the final report is complete. Consequently, any link to the RawData sheets would not lead anywhere.

All raw data must be accessed via the report elements. Example:

[Datenbank Name]	[Diagram1	[Diagram1]
[Inhalt Vorlage, Name]	[Diagram1]	[Diagram1]
[Werte, Alle Bemerkungen(1)]	[Diagram1]	[Diagram1]
[-"-]	[Diagram1]	[Diagram1]
[-"-]	[Diagram1]	[Diagram1]
[-"-]	[Diagram1	[Diagram1]

For the insatiably curious, however, the following shows the structure of RawData1:

	A	B	C	D	E	F	G	H
1	Database Name							
2	Database User							
3	User Language							
4	Computer Name							
5								
6								
7								
8								
9								
10	Content Template, Name					1		
11	Content Template, Path					Content Entry, Name(1)		
12	Content Template, Description							
13								
14								
15	Content-Definition, Name					Content Entry, Unit(1)		
16	Content-Definition, Path							
17	Content-Definition, Description							
18								
19								
20	Evaluation Template, Name					251		
21	Evaluation Template, Path					Content Entry, Type (String)(1)		
22	Evaluation Template, Description							
23	Evaluation Template, File-Name							
24								
25	Evaluation Definition, Name					Content Entry, Content-Object-Name(1)		
26	Evaluation Definition, Path					Content Entry, Content-Object-Path(1)		
27	Evaluation Definition, Description							
28	Evaluation Definition, File-Name							
29								
30	Job, Name					37758.033		
31	Job, Path					1132741		
32	Job, Description					30		
33								
34								
35						01.01.2000		
36						30.01.2000		
37								
38								
39								
40	7500					0		
41	0					1		
42						Values, Last Remark(1)		
43								

This is just a small part of the sheet. The sheet consists of 130 rows and 250 columns. The RawData sheet can contain data from a maximum of 50 data series, which can then be used in a report.

4.4 Log book

The activities of the REX Add-In are saved in a log. However, this only happens in certain cases.
With CC-initiated saving or printing of reports, status messages and any error messages are recorded in the log.
If the reports are saved in "Hidden" mode, no error messages are displayed. Any error messages that occur are recorded in the log as above. This also ensures that error messages do not cause the "hidden" Excel to hang.

No entries in the log are made while engineering (the setting-up of report objects) is in progress. Any error messages are displayed directly.

The log is in directory C:\PDM-ADP\Log under the file name:
`REX_Reporting_Log.txt`

The log is subject to a size limit. When it exceeds 500,000 bytes, the contents are copied to `REX_Reporting_Log2.txt` and `REX_Reporting_Log.txt` is deleted. If there is an existing file named `REX_Reporting_Log2.txt`, this is deleted before copying.

5 Limitations

Unfortunately it was not possible to implement error messages to intercept the following limitations:

- REX requires Excel 2000 **SP 1** or later.
- Maximum 32,000 report elements, such as placeholders for diagrams, pictures etc. (integer limitation)
- Max. 20 curves per diagram (limitation of REX)
- Max. 50-70 diagrams per workbook. This limit depends on the number of titles / X Y Z labels. (RAM-independent limit. Exceeding the limit causes the Add-In to crash.
- Surface diagrams: The legend must be positioned above the data series.
- Surface diagrams: Data series must be positioned adjacent to each other and without gaps (DS followed by a gap and another DS results in a blank diagram)
- [Headers/Footers: These must contain max. 255 characters after resolution.
- Headers/footers take a long time to create (approx. 2 s per line) They should therefore be used sparingly.
- [Headers/Footers: Depending on exactly where the lines are to be located, a "white box" is displayed while the Add-In is running.
- WordArt pictures are not handled correctly in Excel. Use only GIF and JPG graphics.
- Error characters (e.g. #Value!) in a flag cell cause the Add-In to crash. These error characters must not be used in the following cells: <Overwrite>, <NoPrint>, any descriptive text for diagrams and pictures, entries in the REXPrivate sheet, entries in the Translation sheet or entries in the RawData1 sheet.
- The **Display elements** option works very slowly if the definition or template has first been printed. This option reverts to normal speed if the file is reloaded.

- **Report elements** – delete and copy functions:
  - Preferred methods:
    - In REX Add-In:
      - The **Delete function** button (REX function)
      - Use the wizards for overwriting and copying pictures and diagrams.
      - To copy complete definitions/templates, use the button **Save Definition/Template As…**.
  - Methods in Excel:
    - <Ctrl+C> and <Ctrl+V> (within a workbook): does **NOT** copy report elements.
    - <Ctrl+X> and <Ctrl+V> (within a workbook): moves report elements.
    - <Ctrl+X> and <Ctrl+V> (from one workbook to another): does **NOT** move report elements
    - <Del> key: does **NOT** delete report elements
    - Right-click: deletes report elements (Move cells to..).
    - **Move or Copy Sheet…**: moves or copies report elements (to initiate the moving or copying of a sheet: right click and select **Move or Copy**)

- Do NOT use the name 'X15LS47X' for your own workbooks and sheets.
- Macros in the definitions and templates must not include comments or blank lines between individual macros. Example (WRONG!):

```
Sub ShowMacro()
    Enter <program code> here.
End Sub
' My comment
Sub SaveMacro()
    Enter <program code> here.
End Sub
```

- The command bars (REX Design, REX Engineering, REX Reporting) cannot be translated. The names are used as Idents in the Add-In.
- The sheet names: Diagram, Picture, Translation, RawData, REXPrivate, cannot and must not be translated. The facility to translate these would have made things substantially more complex for the user. (The language of the 4 "inheritance" levels would then have to be kept consistent.)
- Do not select any "unsuitable" definitions or template file names. Examples of unsuitable names: MyDefinition.NewOne.xls (name contains period), MyXLSDefinition.xls (name contains xls).
- Do NOT start your own named ranges (Insert/Name/Define) with **Ima**!
- If a template is opened in REX and you then want to enable a third-party Add-In (e.g. Analysis ToolPack), an Error 23 is displayed. Important: Always log out of REX before making amendments to the Excel file.
- If Excel is open and contains open definitions or templates, the REX Add-In may be disabled when you start a report from CC (in View mode).
  Important: Before initiating a report from CC, please first save any open workbooks. If you acted too quickly, the command bars can be magically restored by enabling and disabling the Add-In **REX_ReportEngineForExcel** under **Tools | AddIns**.
- If you start a report from CC (in View mode) while the Excel Add-In is in Debug mode, this causes an error in CC (Excel2k.INI).
- If CC passes on an invalid printer, REX uses the standard printer. No error message is transmitted. (Excel shortcoming)
- The special CC template for the transfer of data to Excel (RawData) is very large. However, the template must not be reduced (Zoom). Otherwise CC will crash after 5 to 7 reports.

Virus protection in Excel 2003

Microsoft has reinforced the virus protection mechanism in Excel 2003. After installation with the default setting, macros (and add-ins such as REX) cannot be run, or can only be run after several safety messages.
This difficulty can be circumvented by modifying the following settings:
Tools | Options | Security | Macro security | Tab: **Trusted Publishers**.

Select the following options under this tab:
– **Trust all installed add-ins and templates**
– **Trust access to Visual Basic project**.

If REX becomes a program used on a large scale in the future, we plan to obtain official certification for REX. This would enable REX to be used without problems even with the higher security setting.

6 Enhancements based on test and repairs

6.1 Debugging user macros

User macros such as Sub PrintMacro(), Sub SaveMacro(), Sub ShowMacro() cannot be debugged directly. If a "Stop" is inserted in the UserMacro, the yellow highlighting stops on the function call (Application.Run (objRunWorkbook.Name & "!ShowMacro")), and it is not possible to see exactly which stage the user macro has reached.
Solution: Insert a Stop at the start of the user macro. Then interrupt the macro process and start the user macro again manually. You will then be in exactly the right location for the user macro, and full debugging can take place. (Note: Naturally, this procedure prevents the remaining macros and any other activities of REX from being carried out. They will then have to be tested afterwards, in a subsequent complete run).

6.2 Errors in user macros

Errors in user macros cause the Excel VBA Interpreter to crash. It is therefore a very good idea to test all the macros thoroughly, using the approach described above (inserting a stop at the beginning of the user macro). Parts of the program that are susceptible to error should also be protected with their own "On Error" routines.

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Error! No index entries found.

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